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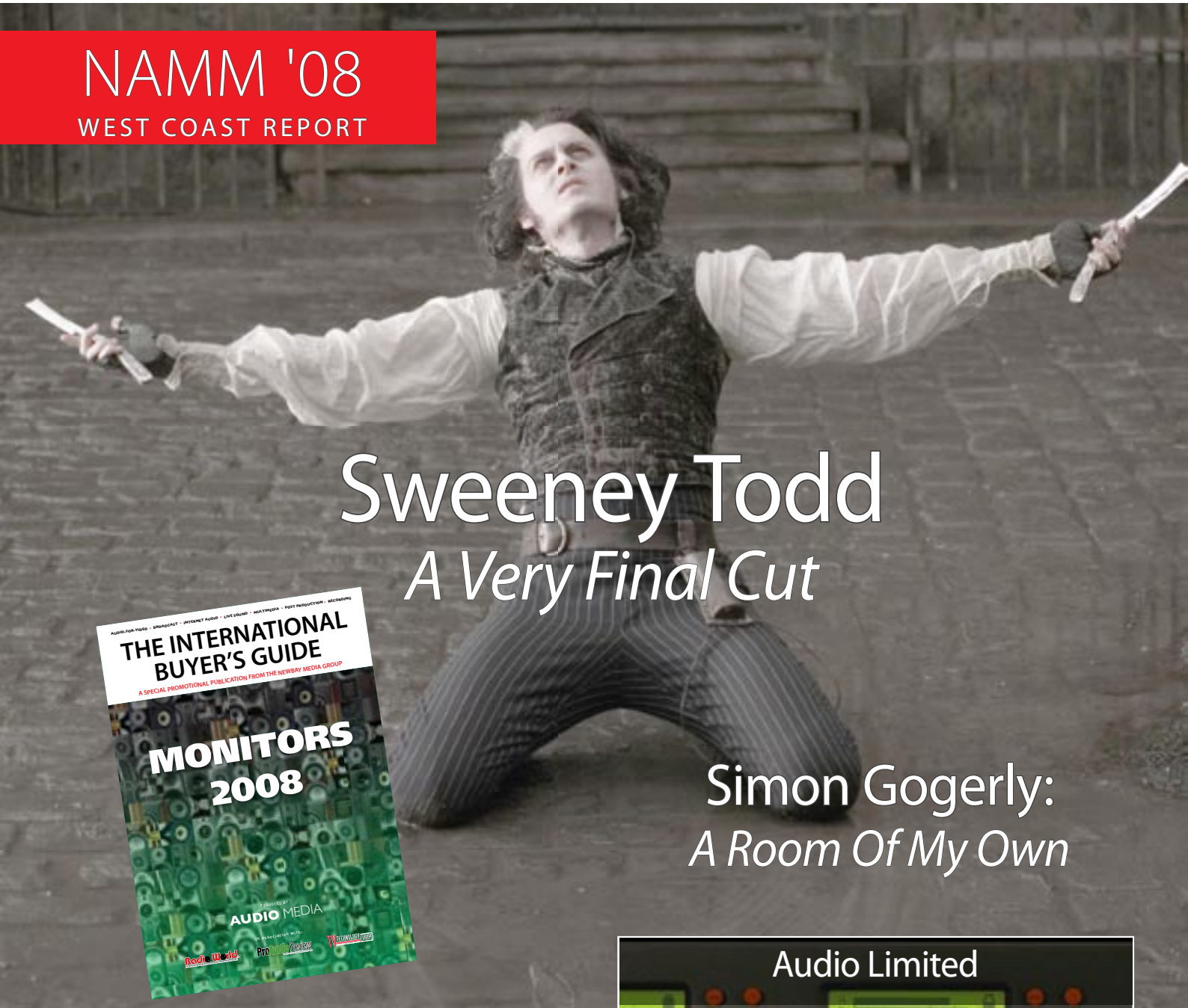

Sweeney Todd
A Very Final Cut

THE INTERNATIONAL BUYER'S GUIDE
A SPECIAL PROMOTIONAL PUBLICATION FROM THE NEWBAY MEDIA GROUP
MONITORS 2008
AUDIO MEDIA

Simon Gogerly:
A Room Of My Own

Special Supplement

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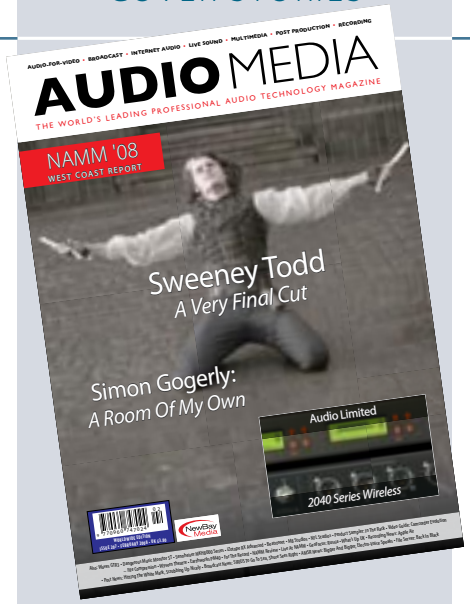

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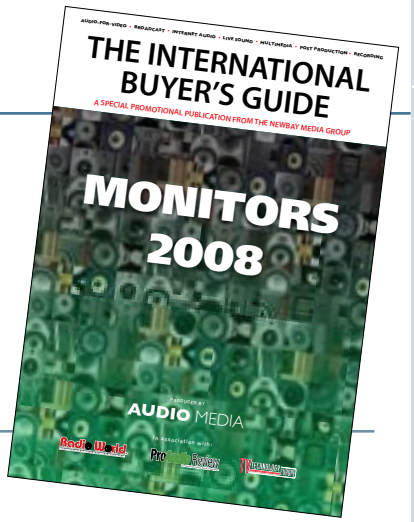
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SPECIAL SUPPLEMENT

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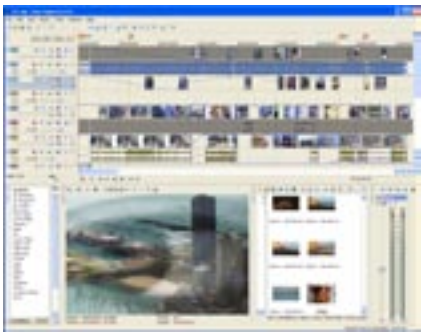
WYVERN THEATRE
64



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Audio people are special. Simply put, how many other professions can you think of where you could honestly say that if you weren't being paid for it, you would probably still do it on your own time? Okay, there are a few, but they're definitely outnumbered by the 'other' sort of job.

This leaves us in a somewhat weakened position when it comes to the sticky questions of cash and opportunity. Imagine that you saw a way to be paid for doing your hobby, and even have someone else pay for the equipment you need and the space you need to do it. It's obvious that there will always be more people seeking gainful employment in this kind of industry than there are jobs available. This drives competition up, prices down, and private educators' income through the roof.

In a climate where 'free' can sometimes be relatively expensive, it's left to service, quality, expertise, and efficiency to pick-up the slack... which doesn't sound much like a hobby any more, does it? So that's the difference. In order to poke your head up above the masses that are clambering for a piece of the financially viable creative spectrum, you have to leave your hobby at home and think business. It follows, therefore, that every operator, engineer, editor, mixer, and tech has a responsibility to their employer that goes way beyond the monitor section, out into the corridors, and into the very fabric of a studio. Otherwise, you're just pursuing a hobby on someone else's time – which is not a very good way of keeping a job.

And now, a few notices. You may have read last month that Audio Media is a media sponsor for the Develop conference in Brighton later this year (July 29-31). I'd urge you to put that date in your diary now if you're at all interested in the emerging opportunities that the next gen' consoles are bringing to core recording, editing, and mixing services.

Also, you should know that we've already had our first Conch awards meeting, and plans are afoot for another successful round of awards for the UK audio production industries. We should be able to confirm details in next month's issue.

If you have anything to say about your particular area of expertise, I've reserved a space for you in Audio Media with the new For The Record feature. We're interested in anyone who has anything constructive to say about their area of expertise – whether it's observations on the business of audio production, tips and tricks you've learnt along the way that your peers may benefit from, or ways forward for the production community in the light of modern economic, technological, and media-centric times.

Lastly, it's up to me to explain that we're a bit miffed to see that someone has seen fit to put an extra day in February this year. As far as I can tell, we've taken a leaf from the international book of timecode standards and implemented a drop-frame solution to the sync error in V1.0 of our wall planner (namely, Friday the 9th). The good news is that from March onwards it's a day-accurate calendar with no need for an external reference. *Paul Mac, Editor*

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*Within Broadcast & Production

Winter NAMM 2008 Review - The Studio Edition

You know that something special is going on when the immigration officer at Los Angeles airport asks, "So, you're going to NAMM then?". Over 88,000 people from over 100 countries went through the doors of the Anaheim Convention Centre in January – all interested in something musical, or at least, something 'sonic'. From rock gods to sax stylists, from studio gear to sheet music, all under one roof. New studio stuff is in the studio section (here), and new live stuff is in SR section (page 62). Easy eh? On with the show...

AKG announced the new D 4 stage microphone. Claimed to provide 'outstanding sound quality and durability on drums, percussion instruments, wind instruments and guitar amps', the new D 4 dynamic microphone features AKG's Varimotion technology and has a custom-built capsule mounting, spring steel wire-mesh grill, and all-metal body.

www.akg.com

Auralex Acoustics, Inc., was proud to show off the first 'green' acoustical foam product on the market, its Eco-Friendly StudioFoam. StudioFoam brand products now include soy components, reducing petroleum-based chemical usage by up to 60%. Auralex StudioFoam is manufactured without CFCs. Auralex says it has improved performance and durability of the products.

www.auralex.com

Benchmark Media Systems launched its DAC1 PRE Stereo Playback Pre-amplifier designed to interface with digital media devices from CD and DVD players to music servers, satellite radio, cable boxes, and more. Analogue sources are also catered for. The unit is designed to act as the central hub in a high-performance stereo playback system.

www.dac1pre.com

Euphonix was certainly the talk of the NAMM hi-tech contingent at NAMM with the launch of its new Artist Series, a line of Ethernet-based DAW control surfaces. Two surfaces have been announced – the MC Mix and MC Control. The former offers a bank of eight faders, channel control buttons, rotary encoders and OLED displays, while the MC Control offers four faders but with the addition of a large colour screen with encoders and user-definable buttons, as well as transport control, and more. The units work with EuCon, HUI, or Mackie Control protocols and Euphonix is working with partners such as Apple, Steinberg, Apogee, Cakewalk, and MOTU to continue integration of their applications with the Artist Series. Steinberg's Nuendo 4 already offers full native EuCon integration. US prices are expected to start at $999.
www.euphonix.com

Software developer **EastWest** previewed it's Quantum Leap Forbidden Planet virtual sample-based synth collection of more than 1,000 presets based on sampled analogue waves, modulators, and sampled filters recorded through a custom Neve 8078 console and vintage Fairchild 670 compressors, with the ability to combine, morph, process, and modulate sample-based sounds in any way they choose..

www.soundsonline.com

As well as a long overdue redesign of its website, **Eventide** announced v3.5 software update for the Eclipse digital multi-effects processor (improved system control, doubled simultaneous parameter control limit), and a new RTAS plug-in that provides real-time control of its H8000 series, H7600, and Eclipse processors.

www.eventide.com

Focusrite showed off the new ISA One transformer-based dual channel mic pre-amp. The unit has the pre-amplifier topology from the original ISA110 module, including the Lundahl L1538 transformer and bespoke zobel network. The pre-amp is complemented by a line input (XLR and TRS Jack) and an independent D.I. channel, complete with dedicated gain control, active or passive impedance switch, a TRS Jack output for routing to an amp and an independent XLR output on the rear. There's also a variable impedance circuit, moving coil VU meter, LED metering, a headphone output with external cue mix input, and optional 24-bit/192kHz AD.

www.focusrite.com

IK Multimedia's NAMM show was dominated by two areas – guitar FX and ARC (Advanced Room Correction). On the FX side, the company announced that AmpliTube X-Gear is now shipping with Stomp I/O, its advanced USB foot controller and audio interface. X-Gear is a shell-host for all 'powered by AmpliTube' plug-in products. Stomp I/O comes with five full software packages with over 150 different modern and vintage gear models. ARC is an acoustic room correction system in a plug-in. It comes with a measurement microphone and features Audyssey MultiEQ technology for measurement and correction.

www.ikmultimedia.com

iZotope, Inc announced its iZotope RX audio restoration plug-ins, soon to be available for VST, Audio Units, MAS, Pro Tools (RTAS, AudioSuite, HTDM), and DirectX. The RX plug-ins remove hiss and buzz, clicks and crackles, repair overload distortion, and perform 'spectral repair'.

www.izotope.com

Solid State Logic had several new announcements at the NAMM show. These included Duende Mini, and Pro Convert. Duende Mini is a smaller brother to the Duende DSP processing system and ships with the EQ and Dynamics Channel, along with fully functional trial versions of other Duende plug-ins including Duende Stereo Bus Compressor, Drumstrip, X-EQ, and X-Comp. SSL also showed the worldwide shipping of the eagerly awaited Pro-Convert application, a 'Digital Audio Project Translator application for moving sessions from one DAW environment to another'. Compatible with over 40 different applications, including Pro Tools 7.x, the software also includes batch conversion for audio files, frame accurate offset, fade curve translation control, and off-line conversion.
www.solid-state-logic.com

JZ Microphones introduced the new Black Hole microphone. It's been developed in Latvia and features two independent, opposing large capsules with diaphragms prepared using a patented 'variable spluttering' technology. It has three switchable

polar patterns, and comes with an innovative stand mounting system.

www.jzmic.com

KRK announced a new room correction product called ERGO (Enhanced Room Geometry Optimisation). Based on Lyngdorf Audio's Room Perfect analysis system, ERGO is a stand-alone processor that can analyse a room and correct for room anomalies in both the time and frequency domains. During analysis, the unit connects to PC or Mac via FireWire.

www.krksys.com

Lexicon showed off its new PCM96 Professional Stereo Reverb/Effects Processor. The unit features a wide array of reverb algorithms with related delays and effects, and integrates into the modern studio as a control-only DAW insert or FireWire hardware plug-in.

www.lexiconpro.com

M-Audio was not standing still at NAMM. As well as an update to its Torq DJ software, two more studio orientated announcements were forthcoming. First was the launch of ProFire 2626 FireWire recording interface. It boasts 26 x 26 simultaneous I/O, 'Octane' pre-amp technology, and onboard DSP mixer. Also new were updates to two of its reference monitor models, the BX5a Deluxe and the BX8a Deluxe. Both now have new waveguides and enhanced driver integration.

www.m-audio.com

McDSP had a green message and three new plug-ins to shout about at NAMM. First, McDSP will discontinue the production of boxed products for individual products and will donate 1% of its annual income to environmental causes. The new plug-ins are the DE555 de-esser, the FutzBox signal distorter and noise generator, and the NF575 noise filter.

www.mcdsp.com

MOTU introduced the 828mk3, a FireWire interface providing 28 inputs and 30 outputs in a 1U rack with all I/O routed to an onboard 16-bus digital mixer with hardware-based DSP effects including reverb, parametric EQ, and compression/limiting (up to 58 channels) – to inputs, outputs, or busses. Also new was Electric Keys, a new cross-platform virtual instrument that recreates the sounds of 50 classic, vintage electric keyboard instruments, and the latest Digital Performer 6 with a newly redesigned user interface and major new features, including ProVerb (convolution reverb), MasterWorks Leveler, XML file interchange with Apple Final Cut Pro, and more.

www.motu.com

Neutrik showed off its new color-coded SCDX Hinged Covers at NAMM 2008. Compatible with all of the company's D-Sized chassis connectors and receptacles, Neutrik's SCDX Hinged Covers protect connectors from water, dust and dirt .

www.neutrik.com

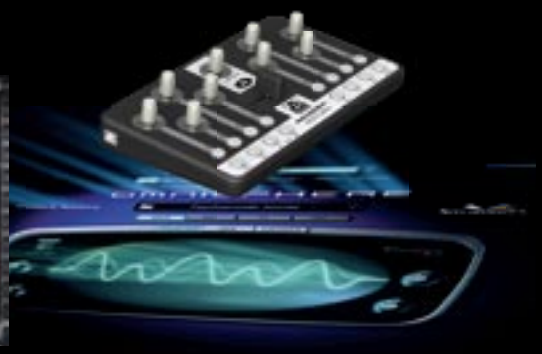
Novation announced developments in the Automap Universal line, with the launch of a new controller called Nocturn. With eight rotary controllers, LED rings, user-assignable buttons, a 45mm cross-fader, and the 'speed dial' (controls any parameter with mouse focus), Nocturn takes full advantage of the new V2 Automap Universal software..

www.novationmusic.com

One very interesting booth at NAMM was that of **Percussa**, a Belgian company with an eye on 'alternative' control. Its main product, Audio Cubes, is just that – plastic cubes, each withvariable colouring, USB interface, and jack I/O. Cubes can act as a group through wireless interaction, and can control audio software, generate 'lo-fi' sounds and music patterns, and also used as 'lo-fi' effects processors. Control is achieved by moving the cubes around, turning them, and bringing them in and out of the 40cm wireless range.

www.percussa.com

PreSonus Audio Electronics announced the AudioBox USB 2x2 USB recording system, DigiMax D8, and FireStudio Tube. AudioBox USB is a USB bus-powered interface with two mic/instrument pre-amps with 48v phantom power, two balanced TRS outputs, and MIDI in/out. Included is the PreSonus ProPak Software Suite with Cubase LE 4, and a suite of real-time plug-in effects, drum loops, and samples. DigiMAX D8 is an eight-channel



Winter NAMM 2008 Review - The Studio Edition

mic pre with both direct analogue outputs and ADAT optical outputs. The FireStudio Tube is a FireWire interface device with 16 analogue inputs (two tube-based super channels). The unit has MIDI I/O, LED input metering, headphone output, and a zero-latency matrix mixer. FireStudio Tube ships with the Propak software suite.

www.presonus.com

Prism Sound announced the shipping of its new multi-channel Orpheus Firewire computer interface. First unveiled at 2007's Frankfurt Musikmesse, Orpheus is a 1U, 19-inch, 192kHz-capable device offering eight simultaneous balanced analogue inputs, four line-level jack ins, and four auto-sensing mic/line Neutrik combi jacks. Each analogue input has its own patented Prism Sound Overkiller built in, to prevent overloads pre A-D conversion. There are switchable SPDIF/AES-EBU digital inputs and an eight-channel ADAT optical input, allowing the Orpheus to handle 18 simultaneous inputs to any computer-based recording system via FireWire.

www.prismsound.com

Roland showed the new R-44 four-channel portable recorder. Smaller than previous offerings, the R-44 records uncompressed audio to either SD or largeer SDHC cards at up to 24-bit/96kHz. An onboard limiter and DSP effects, a pre-record buffer, four combo jack inputs, built-in stereo microphones and speakers, two-unit linking for eight-channel recording, phantom power, and more are among the features, as well as the same mic pres as the R-4 Pro.

www.rolandsystemsgroup.net

The new iNano from **SM Pro Audio** will no doubt prove to be popular. It's a compact desktop passive volume attenuator. Featuring balanced combo XLR/TRS and 3.5mm inputs and TRS/3.5mm outputs, a mute switch, and a larger than average rotary volume controller

www.smproaudio.com

Spectrasonics previewed its brand new flagship virtual instrument Omnisphere. This new 'Power Synth' combines a wide variety of hybrid realtime synthesis techniques, a library of 'Psychoacoustic' sounds, and more, including Variable Waveshaping DSP synthesis, granular synthesis, timbre shifting, FM synthesis, polyphonic ring modulation, high-resolution streaming Sample Playback, Harmonia, Dual Multi-mode Filter structure, Chaos Envelopes, an advanced unison mode, and the Flex-Mod modulation routing system. Omnisphere is the first instrument to take advantage of Spectrasonics' new STEAM Engine core technology.

www.spectrasonics.net

Sonnox has launched its first new plug-in since the company became independent in April 2007; the Oxford SurprEsser is a high-featured professional de-esser-cum-dynamic EQ, featuring a so-called Basic mode for quick-fixes and Advanced mode for increased functionality and fine-tuning. "[This] fully-spec'd, high-quality plug-in… has actually evolved in the development process to become a whole lot more than a simple d'esser," stated Sonnox Sales & Marketing Manager Nathan Eames.

www.sonnoxplugins.com

SoundToys announced planned full VST support for both Mac and PC for the SoundToys Native Effects Bundle and the native-capable plug-ins from the SoundToys TDM Effects Bundle. Also new was version 3.02 of the company's entire software line. This free update for existing users ensures compatibility with Logic 8, Apple's Leopard OS, and Digidesign Pro Tools 7.4 on Mac and Windows. It also features improved DSP efficiency for host-based platforms.

www.soundtoys.com

Tascam showed two main new products at the show. The new DR-1 portable recorder is a compact unit with built-in mics and a 1GB SD card. A pair of microphones is mounted on a variable angle mechanism and there's auto gain control, analogue limiting, low-frequency cut-off, built-in Tuner and Vocal Cancel features, and an Overdub feature to record narration, singing, or instruments over an existing recording. Also new was the VL-A series of reference monitors – a value-priced line-up including the VL-A4, VL-A5 and VL-A8. Each is self-powered and employs balanced TRS/XLR combination inputs. The LF-S8 sub-woofer rounds out the lineup.

www.tascam.com

TC Electronic had a busy NAMM, with several big launches. Among them was the new PowerCore X8, the most powerful PowerCore to date with twice the processing power of PowerCore FireWire. Also new was the Studio Konnekt 48 audio interface with IMPACT II pre-amps and built-in DSP ranging from channel strips and reverb, to speaker control and bass management. It also comes with a multi-functional remote. Also in the Konnekt range was the Konnekt 6, a desktop interface with dedicated monitor control features, dedicated volume knob, 3-mode metering, an IMPACT mic pre-amp and true Hi-Z inputs. The company also announced the LM5 and LM5D Loudness Radar Meter plug-ins for ProTools|HD. The plug-ins derive statistical information from the ITU-R BS.1770 standard to visualise instant loudness and loudness history, and are are highly suitable for use in broadcast, post production, film, and music alike.

If you want to read about NAMM show launches from the SR perspective, turn to the AMSR section now (page 62).

www.tcelectronic.com

TC-Helicon announced the immediate availability of V1.2 of its vocal harmony effects processor, VoiceWorksPlus, and its downloadable PC/Mac-compatible editor. The latest software version adds numerous features and improvements that augment live vocal performance as well as editing on the device.

www.tc-helicon.com

Ultrasone introduced the next generation of its headphones at The NAMM Show, created for 'discerning musicians, producers, and engineers'. The comprehensive update starts with Ultrasone Pro (formerly known as PROline), which includes the elite PRO 550, 650, 750, and 2500 models. New features include an aluminium nameplate, semi-hard case for storage and transport of headphones and all accessories, including spare earpads, removable cables and mini adaptor. New features of the ULTRASONE HFI line include the addition of the HFI 580 and 780 models with the new S-LogicPlus system.

www.ultrasone.com

Universal Audio demonstrated the new LA610 Signature Edition tube recording channel. Only 500 units will be released and all will feature US-made New Old-Stock (NOS) tubes, CineMag transformers, and a 'black-face' cosmetic look. Facilities include mic pre/DI, EQ, and an LA-2A style T4 opto-compressor. UA also announced new development partners for the UAD DSP platform, including Valley People, Sound Performance Lab, and Empirical Labs.

www.uaudio.com

As well as GTR3 (reviewed in this issue) **Waves** launched the new Studio Classics Collection bundle with the SSL 4000 collection, the API Collection, and the British V-Series. Also new was the diminutive iGTR Personal Guitar Processor, a pocket-sized processor with guitar amp and effects. Guitarists can plug in an iPod or similar for play-along sessions, or link two iGTRs via an aux input for group activities.

www.waves.com

Yamaha introduced the Pocketrak 2G, a compact pocket recorder featuring 2GB of built-in memory, long battery life, easy USB file transfer, and Steinberg Cubase AI DAW software. The unit records in PCM, MP3, and Windows Media formats and sports a rechargeable AAA nickel-hydrogen battery that charges from the USB connection. The unit also has a built-in speaker and headphone jack.

www.yamaha.com

NEW PRODUCT

CEDAR Audio DNS3000

CEDAR Audio has announced upcoming availability of the DNS3000 Dialogue Noise Suppressor, combining the tactile control surface of the original DNS1000 with Pro Tools integration of the DNS2000. Additional features include onboard scenes with an intuitive recall system, automation to timecode, flying faders, and sample rates up to 96kHz.

CEDAR Audio
+44 (0)1223 881 711
CEDAR Audio (USA)
+1 207 773 2422
www.cedaraudio.com

ATLANTA

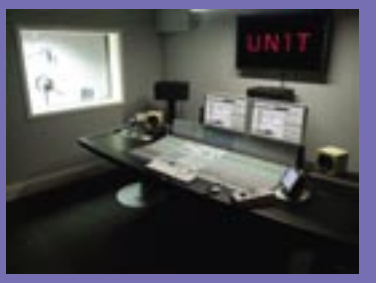
WSDG Helps Readeez Record

New York architectural and acoustic designers Walters-Storyk Design Group, an Atlanta home-based AV facility for Micheal Rachap's The Readeez Company, "...business plan includes producing and marketing hundreds of short films on a broad array of topics for children of all ages." Said Storyk: "The Readeez Audio Kitchen acoustics are fascinating. The 18-foot ceiling of the Big Room is gently domed; I haven't heard anything quite like it."

Walters-Storyk Design Group
+1 845 691 9300
www.wsdg.com

LONDON

UNIT Scrubs Up Nicely With Digidesign



HHB Communications' Soho-sited Digidesign-orientated post-production specialist division Scrub has supplied a Pro Tools|HD 3 system and 24-fader ICON D-Command worksurface package – including plug-ins, monitoring, metering, and outboard – to all-Apple, all-HD post-production house UNIT, conveniently located just off London's Soho Square. Director of Operations Tom Bridges sang Scrub's praises thus: "Scrub's reputation preceded them as a knowledgeable, friendly, and down-to-earth outfit. They really took the time to listen to our needs, and worked with us to design the optimum solution."

Scrub - A division of HHB
+1 (0)20 7025 6020
www.hhb.co.uk/hhb/uk/scrub/

LONDON

Voice And Music Hits The (White) Mark

Suffolk-sited acoustic and technical design company White Mark has created a spacious five-studio complex – housing two 5.1 dubbing theatres, two stereo suites, and a music composition studio – in London's Soho Square for composition team Kim Goody and Alan Coates' The Voice And Music Company, capable of handling composition, sound design, and post-production for a varied film and television clientele. Concluded Coates: "The studios look beautiful and the future looks very bright."

White Mark
+44 (0)8700 757 767
www.whitemark.com

MADRID

Media Logic Builds For Telson

Berlin-based system vendor Media Logic has designed and built a Fairlight Constellation-centred post-production department for Madrid's Telson Servicios Audiovisuales.
www.new-media-logic.de

NEW PRODUCT

Blastwave FX Revolver

Blastwave FX has released Revolver, apparently the world's first 5.1 surround sound production elements library, featuring 1000 high-definition (24-bit/48kHz broadcast .wav) elements, compositions, drones, and trailers spread across six DVDs.
www.blastwavefx.com

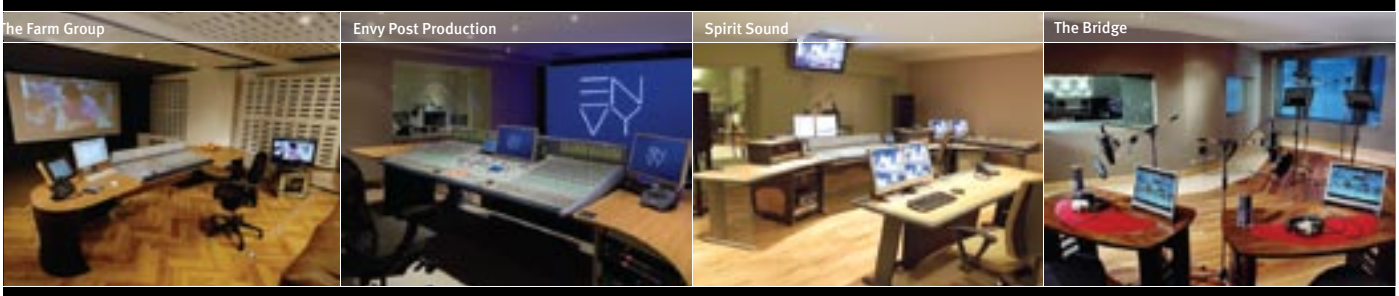
ATHENS

Soundsnap.com Goes To Hollywood

Free online sound library Soundsnap.com is now offering new sounds from notable Hollywood film sound designers, including Paul Virostek and Ric Viers.
www.soundsnap.com

AKA design studio furniture

We offer a free design service on our Product desks which start from £998 + VAT. Please visit the website to see our full range of furniture and order the latest brochure.



+44 (0)208 829 9100
www.akadesign.co.uk

NEW PRODUCT

Sonnox Oxford SurprEsser

Sonnox has announced upcoming (March) availability of its first new plug-in since the company became independent in April 2007; the Oxford SurprEsser is a high-featured professional de-esser-cum-dynamic EQ, featuring a so-called Basic mode for quick-fixes and Advanced mode for increased functionality and fine-tuning. "[This] fully-spec'd, high-quality plug-in... has actually evolved in the development process to become a whole lot more than a simple de-esser," stated Sonnox Sales & Marketing Manager Nathan Eames.

Source Distribution
+44 (0)20 8962 5000
www.sourcedistribution.co.uk
Shoreview Distribution
+1 781 784 1144
www.shoreviewdistribution.com

PRODUCT UPDATE

Prism Sound Orpheus

Prism Sound is shipping Orpheus, its new multi-channel FireWire recording interface, a 192kHz-capable, 19-inch rack-mountable (1U) device offering eight simultaneous balanced analogue inputs, four line-level jack inputs, four auto-sensing mic/line Neutrik combi jacks, switchable SPDIF/AES-EBU stereo digital input, eight-channel ADAT optical input, and built-in mixer (driving eight analogue outputs), plus high-quality mic pre-amps – fully software-controllable via a PC (Windows XP)- and Mac (OS X)-compatible control applications.

Prism Media Products
+44 (0)1223 424 988
Prism Media Products (USA)
+1 937 289 3355
www.prismsound.com

NEW PRODUCTS

Apple Mac Pro, Xserve, MacBook Air, Time Capsule

Apple has introduced its new flagship Mac Pro desktop with eight processor cores (combining two of Intel's new nanometer Quad-Core Xeon processors), high-bandwidth hardware architecture, dual-independent front side buses, and up to 32GB of memory to purportedly double its predecessor's performance. Also new, a 1U rack-optimised Xserve server with up to 3TB storage that is, likewise, up to twice as fast as its predecessor and includes an unlimited client license for Mac OS X Server Leopard.

Meanwhile, MacWorld in San Francisco saw Apple unveiling the world's thinnest notebook – also notable for its (optional) 64GB solid-state drive – in the slender form of the MacBook Air – a mere 0.4 cm at its thinnest curvaceous point, growing to a maximum 1.94 cm in its middle – sporting no connections as such, bar a single USB port and micro-DVI video out, relying instead on its wireless attributes, hence, presumably, its name. Here Apple also introduced Time Capsule, billed as being a backup appliance that automatically and wirelessly backs up everything on one or more Macs running Mac OS X Leopard using the latter's Time Machine automatic backup software. In a nutshell, Time Capsule combines either a 500GB or 1TB server-grade hard disk with an 802.11 wireless base station in a compact package priced at £199/$299 or £329/$499, respectively.

Apple (UK)
+44 (0)845 600 1683
Apple
+1 408 996 1010
www.apple.com

NEW PRODUCT/UPDATE

Crowley and Tripp Roswellite, el Diablo

Crowley and Tripp has introduced the Naked Eye Roswellite ribbon microphone, featuring the same Crowley and Tripp nanocomposite ribbon material (Roswellite) first introduced in the company's el Diablo Mercenary Edition microphone, while sharing the True Dual Voicing design and carefully crafted tone of the Naked Eye Classic. The Naked Eye Roswellite comes complete with a lifetime warranty, wooden storage box, and low-diffraction rotary Monocle Mount.

The American hand-built microphone-maker has also announced that the el Diablo ribbon microphone is now available in a stainless steel finish to match the company's current line of professional microphones, whose thick stainless steel bodies provide aggressive shielding, high strength, and reduced resonance (compared to thinly-bodied microphone shells).

KMR Audio
+44 (0)20 8445 2446
www.kmraudio.com
Soundwave Research Laboratories
+1 508 231 4515
www.soundwaveresearch.com

NEW PRODUCT

MXL Microphones USB.009-24

MXL Microphones has introduced the USB.009-24, USB cardioid condenser microphone with 24-bit A/D and D/A converters with up to 96kHz recording capability, plus mix and analogue gain controls.

www.soundcontrol.co.uk
www.mxlmics.com

PRODUCT UPDATES

RNDigital UNIQUEL-IZER, UNIQUEL-IZER LE, FINIS

RNDigital has released Pro Tools HD TDM versions of its UNIQUEL-IZER and UNIQUEL-IZER LE EQ and FINIS brick wall limiter plug-ins.

www.rogernicholsgigital.com

NEW PRODUCTS

McDSP DE555 De-Esser, NF 575 Noise Filter, FutzBox

McDSP has announced upcoming availability of three new plug-ins: DE555 De-Esser, NF 575 Noise Filter, and FutzBox (distortion and noise generator).

www.mcdsp.com

NEW PRODUCT

CEntrance AxePort Pro

CEntrance has launched the AxePort Pro, an eminently portable 24-bit/96kHz performance-quality USB interface for guitarists and bassists wanting to record whenever inspiration strikes.

www.centrance.com

NEW PRODUCT

Audio-Technica AT2020 USB

Audio-Technica has announced upcoming (March) availability of the AT2020 USB, an affordable (£99.95, including VAT), large diaphragm, studio condenser microphone featuring USB connectivity.

www.audio-technica.co.uk
www.audio-technica.com

PRODUCT UPDATE

Minnetonka Bundle For AudioTools AWE

Minnetonka Audio Software has released the latest version (1.3) of Master Bundle For AudioTools AWE, a suite of plug-ins designed and integrated for use in its AudioTools AWE automated workflow engine.

www.etcetera.co.uk
www.minnetonkaaudio.com

NEW PRODUCTS

Ultrasone HFI-580, HFI-680, HFI-780

Ultrasone is all set to launch its new HFI series at Prolight + Sound Frankfurt, comprising the HFI-580 (Pure Power), HFI-680 (Pure Reality), and HFI-780 (Pure Animation).

www.ultrasoneuk.com
www.ultrasoneusa.com

NEW PRODUCT

Zero-G Phaedra

Digital audio sample specialist Zero-G has announced availability of Phaedra, a Zero-G/Xfonic KONKAKT PLAYER 2-based virtual analogue synth-style instrument featuring over 4GB of sounds (720 patches) constructed from 20,000 samples.

www.timespace.com

NEW PRODUCTS

MOTU 828mk3, DP6,

Cambridge, Massachusetts-headquartered computer-based audio and video production hardware and software peripherals developer MOTU has introduced the 828mk3 - "...the most advanced FireWire audio interface ever developed by MOTU," according to Director of Marketing Jim Cooper, providing 28 inputs and 30 outputs in a 1U rack-mountable form factor with all I/O routed to an onboard 16-bus digital mixer driven by hardware-based DSP with 32-bit floating point precision allowing users to apply no-latency, computer-independent effects processing – including reverb, parametric EQ, and compression/limiting (up to 58 channels) – to inputs, outputs, or busses.

Meanwhile, MOTU has announced upcoming availability of the latest version of its flagship audio sequencing software, Digital Performer 6 (DP6), with a newly redesigned user interface and major new features, including a CPU-efficient convolution reverb (ProVerb), MasterWorks Leveler (virtual Teletronix LA-2A optical levelling amplifier), XML file interchange with Apple Final Cut Pro, interleaved Broadcast WAV file support, virtual instrument pre-rendering, improved third-party AU plug-in support, and much more besides.

MOTU has also announced availability of Electric Keys, a new cross-platform virtual instrument that recreates the sounds of 50 classic, vintage electric keyboard instruments from over 20,000 carefully crafted multi-samples via its 32-bit, CPU-efficient 256-note polyphony UVI playback engine.

Music Track
+44 (0)1767 313 447
www.musictrack.co.uk
MOTU
+1 617 576 2760
www.motu.com

BUCKINGHAMSHIRE

Wheeler End Studios Up For Sale

January 2008 saw Wheeler End's namesake Wheeler End Studios being put up for sale with a cool price tag of £3.9 million almost 30 years after owner Suzanne Lee built the residential recording facility in a 17th Century farmhouse building with former husband Alvin Lee (of seminal rock back Ten Years After fame), having sold their previous home and accompanying studio, Hook End Manor, to Pink Floyd's David Gilmour back in 1980. "It wasn't a commercial studio to begin with – more an advanced music room where Alvin and his friends could record in comfort and in private," noted Lee, adding: "Family friends like George Harrison and Joe Brown would often turn up."

Having become a commercial facility in 1994, Noel Gallagher more recently took out a long-term tenancy lasting eight years, recording the Oasis albums *Standing On The Shoulder Of Giants* and *Heathen Chemistry* there; Gallagher's decision to relinquish that tenancy was the catalyst that persuaded Lee that it was time to move on: "I want to see it sold to someone who intends to carry on using it as a recording studio to preserve its amazing heritage and atmosphere."

Wheeler End Studios
+44 (0)1494 881 190

NEW PRODUCT

KRK Systems ERGO

KRK Systems has announced upcoming (April) availability of ERGO (Enhanced Room Geometry Optimization), a digital room analysis and correction system based on Lyngdorf Audio's patented Room Perfect 3D room analysis and correction algorithms that purportedly improves any studio mixing space by correcting for 'real world' acoustic problems. ERGO connects to a Mac or PC via FireWire when analysing, though all processing is internal, and doubles up as a high-quality four-input/six-output audio interface.

Focusrite Audio Engineering
+44 (0)1494 462 246
www.focusrite.com
KRK Systems
+1 954 316 1580
www.krksys.com

NEW PRODUCT

Solid State Logic Duende Mini

Solid State Logic has launched Duende mini, a cost-effective (£464.13, including VAT), cut-down (16-channel) version of its 1U rack-mountable DSP-based plug-in processing platform, squeezed into a stylish one-third rack width, all-metal construction, desktop unit that connects to Mac- and PC-based DAW users' computers via FireWire. Duende mini is upgradeable to 32 channels while up to two such units can run simultaneously on a single computer system.

Sound Technology
+44 (0)1462 480 000
www.soundtech.co.uk
Solid State Logic (Western Region)
+1 323 549 9090
www.solid-state-logic.com

NEW PRODUCT

Marantz Professional PMD580

Marantz Professional has launched the PMD580, a 1U rack-mountable Compact Flash memory card (linear PCM and MP3) recorder offering Ethernet LAN and USB connectivity.

D&M Professional Europe
44 (0)1753 680 023
www.dm-i.eu
D&M Professional
+1 630 741 0330
www.d-mpro.com

BIRMINGHAM

SBES08 Date Change

Sound Broadcast Equipment Show organiser Point Promotions has announced that the SBES08 Broadcast + Audio Event will now run from November 5-8 at Birmingham's NEC to include a Saturday opening.

www.sbes2008.com

LOS ANGELES

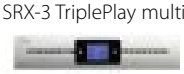
Shure Sees Soundtronics Right

Burbank-based Soundtronics used multiple Shure UHF-R wireless systems to handle more than 140 active RF channels on Fox TV's The Next Great American Band.

www.shure.co.uk
www.shure.com

CALIFORNIA

SIRIUS Goes To Sea (Ray)



Antex Electronics is supplying its SRX-3 TriplePlay multi-zone SIRIUS Satellite Radio receiver for easy installation on boat-builder Sea Ray's flagship 60 DA (Sundancer) yachts.

www.antex.com

NEW PRODUCTS

Omni Audio ONE FM, Omnia.8X

Omnia Audio has expanded its Omni ONE multi-cast broadcast audio processing range to include the ONE FM, featuring the same processing topology as the original Omnia FM, including its pre-emphasised final limiter/clipper. Other notable features include wideband AGC (for smooth gain riding); four-band AGC (to build density before limiter stages); four-band peak limiter; time-aligned, dynamically flat crossover; selectable phase rotators; and integrated digital stereo generator (with advanced peak control, two composite MPX outputs, SCA input, and 19kHz output).

The Cleveland, Ohio-based digital audio signal processing specialist is also shipping its Omnia.8X, a new 2U rack-mountable processor capable of simultaneously handling eight stereo audio channels (each with three bands of AGC) with all audio I/O entering and exiting on a LiveWire Ethernet port, ready to connect to an Axia IP-Audio network. Features include Wideband AGC, look-ahead final limiter, and Omnia Bass Management; networked remote control and configuration using any standard Web browser; online software upgrades; and more.

SBS
+44 (0)1424 445 588
www.sbsfm.com
Omnia Audio
+1 216 241 3343
www.omniaaudio.com

PRODUCT UPDATE

AEQ Arena

AEQ has added new working modes to its Arena digital mixing console for broadcast and television applications: Normal Mode (input Gain, Dynamics, EQ and Filters, CUE and fader adjustments are accessible in every control surface channel), Bus Send Mode (routing to output channels four buses are directly accessible via the control surface), Channel Setup Mode (associated feedback channel for each input channel), and Multiplex Mode (associated output channel for all input channels).

AEQ UK
+44 (0)845 838 1529
www.aequk.com
AEQ USA
+1 954 581 7999
www.aeqbroadcast.com

PRODUCT UPDATE

Klotz Digital AEON

Klotz Digital has upgraded its AEON digital OnAir mixing console to offer MADI interface cards that can be configured to work in 56- or 64-channel modes; also new, AEON audio networking via OCTA-BUS, capable of linking several consoles or connecting a console to the MCR (Main Control Room) via CAT5 cabling, providing eight bi-directional channels per bus.

Clyde Broadcast Products
+44 (0)141 952 7950
www.clydebroadcast.co.uk
Klotz Digital Audio Systems
+1 678 966 9900
www.klotzdigital.com

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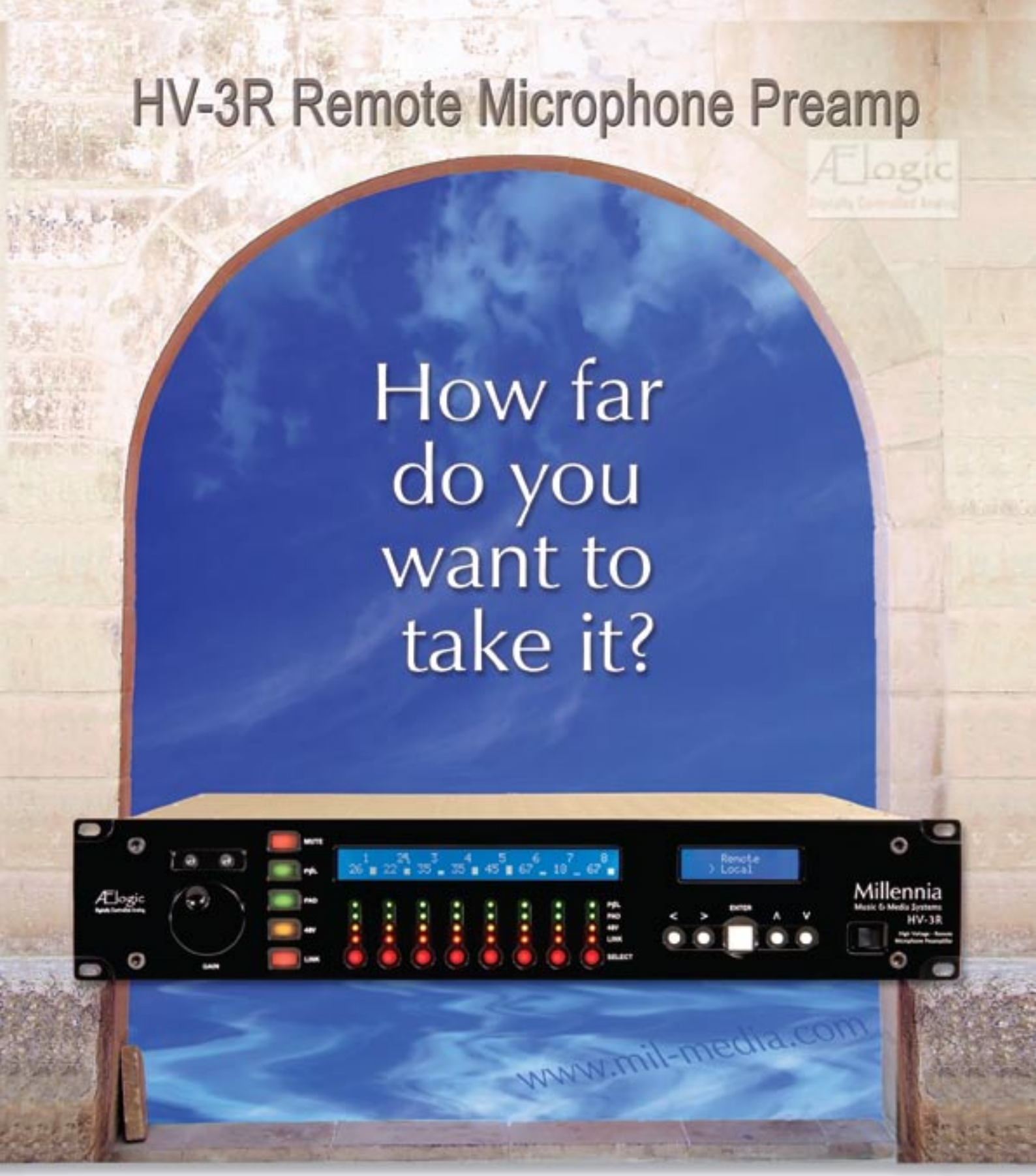

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whatsupuk@audiomedia.com

A Slow Burning Switch Off

Ofcom proposes a beauty contest, as KEVIN HILTON looks at the Digital Dividend.

Some stories burst out, grab attention for a while, and then are gone. There are others that rumble on interminably, frequently out of all proportion to their importance. Then there are the slow-burners that do have a reason for their longevity. The Digital Dividend is one of these, although the organisation behind it, Ofcom, probably hoped it would fall into the first category and just turn out like the other re-allocations of frequency spectrum.

But the prize in this case is bigger; the frequencies freed by switching off analogue television, which begins in earnest this year. Broadcasters, telecom companies, and mobile phone operators, many looking towards new multi-media and handheld services, were the obvious candidates for this bounty, both in terms of what they could do with it and having the resources to pay for the privilege.

What surprised Ofcom was the speed and force with which the supposed minority interested parties lobbied, argued, and generally jumped up and down to ensure that their special requirements were recognised by the regulator. The point was clear; Ofcom had underestimated the needs of the users of radio microphones and other radio equipment for television, theatre, and live music production, known as PMSE (programme makers and special events).

Under the initial proposals Channel 69, which was allocated for wireless microphone use in 1992, was to be de-regulated, throwing PMSE into the same pool as more politically and financially powerful users of spectrum. Not all audio professionals rejected the idea but others thought it would benefit only semi-professional users.

Trade bodies and manufacturers, including BEIRG (British Entertainment Industry Radio Group), AMPS (Association of Motion Picture Sound), IBS (Institute of Broadcast Sound), PLASA (Professional Lighting & Sound Association), Sennheiser and Shure, banded together as the PMSE Pro User Group and engaged Westminster lobbyists to state their collective case.

This worked, not only getting notice from Parliament but also the media in general, although in a slightly hysterical way. A presenter on BBC Radio 2, who should have known better, announced that Ofcom had drawn up plans that would bring an end to live concerts. Sensationalist, of course, but the underlying seriousness of the situation was that wireless mics would have been left with fewer available frequencies and while live concerts and news reports would still have been able to use radio equipment, life would have become more difficult, with a greater risk of interference from other devices on nearby frequencies.

The regulator's latest statement on the matter, published at the end of last year, still gave a lot of space to the potential use of freed up spectrum for broadcasting, and high definition in particular, mobile phones and emerging wireless technologies; but Ofcom stated that the intention of its new proposals is to "deliver the maximum benefit for citizens and consumers in the UK".

The document continued that, as far as PMSE was concerned, there was a "compelling case" for reserving spectrum for a particular use, thereby avoiding "the risk of market failure in an auction". To prevent disadvantaging the PMSE sector in any cash stand-off with much richer operators, Ofcom has decided to continue licensing Channel 69 and proposes a "beauty contest" to award the majority of available interleaved spectrum to a band manager, which would administer the frequencies for PMSE use and make money from charging those using the spectrum.

In general the professional wireless sector views the new proposals as positive. But there is concern over future spectrum usage and how today's equipment will work with emerging technologies. Amongst these is cognitive radio, regarded by many as the answer to the problem of limited spectrum because such equipment is aware of frequency conditions and can slot into frequencies that are not being used. There is the possibility of putting these networks in the interleaved areas between main TV and radio transmissions, a position also suggested for PMSE.

Alan March, who works for Sennheiser and represents BEIRG, says this is currently the cause of controversy in the US, and now Europeans are looking for some kind of assurance about cognitive devices. "We're in favour of this technology only if it doesn't interfere with PMSE equipment," he says. "At the moment nobody can prove that cognitive equipment can detect wireless mics, which will be a problem."

The IBS welcomed the proposals for Channel 69 but spokesman Malcolm Johnson said his main concern was the position of the band manager. That role is currently held by the Joint Frequency Management Group (JFMG), which Johnson says has performed an important service. "My reading of the situation is that Ofcom is looking for other players, using market forces to decide who runs the PMSE frequencies," he observes.

JFMG's contract with Ofcom expires at the end of September this year and the company is looking to discuss with the regulator a timetable for continuing to manage frequencies on an interim basis until a new structure has been agreed. JFMG's Managing Director, Paul Gill, comments that for his organisation not to look at bidding to be the new band manager "would be silly". But, he says, not at any price. "If the rental costs more than what we would make that wouldn't be good business," he explains. "There has to be common sense in setting the price."

This is not the end of the story; progress has been made but the Pro Users group knows there is still a great deal of work to be done yet. But, as some insiders ruefully admit, at least Ofcom knows who they are now.

North America
USA, CANADA: Synthax Inc. , www.synthax.com

South America
Argentina, Brazil, Colombia, Ecuador, Paraguay, Uruguay, Venezuela: Show Control , www.showcontrol.com.ar
CHILE: Videomedia LTDA. , www.mediaycom.cl

RME . International Distributors

Europe
BULGARIA: Almar Co. Ltd. , www.almar.bg
CROATIA: Neuron , www.neuron-d.com
CZECH REPUBLIC: Disk Multimedia s.r.o. , www.disk.cz
DENMARK: Soundworks , www.soundworks.dk
ESTONIA: IS Music Trading Ltd. , music@online.ee
FINLAND: Carbo'n Music Oy (Ltd) , www.carbonmusic.fi
FRANCE: Arbiter France , www.arbiterfrance.com
GERMANY, AUSTRIA: Synthax GmbH , www.synthax.de
GREECE: Logothetis Music , www.logothetismusic.gr
HUNGARY: Midisoft Studio Kft. , www.midisoft.hu
ICELAND: Tonabudin Ltd. , www.tonabudin.is
IRELAND: Future Sounds , www.futuresounds.ie
ITALY: MidiWare Srl , www.midiware.com
LITHUANIA: Midiaudio Ltd. , www.midiaudio.com
NETHERLANDS, BENELUX: Synthax Benelux v.o.f. , www.synthax.nl
NORWAY: ProLyd , www.prolyd.no
POLAND: Audiostacja s.c. , www.audiostacja.pl
PORTUGAL: Audiolog, Lda , www.audiolog-lda.com
ROMANIA: A.V. Audio Sys s.r.l. , www.avaudiosys.ro
RUSSIA, BELARUS: 4Sonic , www.4sonic.ru
SERBIA, MONTENEGRO: Artist d.o.o. , www.artistsystems.co.yu
SLOVAK REPUBLIC: Sound Service , www.soundservice.sk
SLOVENIA: MTD , www.mtd-el.si
SPAIN: Makermid SL , www.makermid.com
SWEDEN: Fitzpatrick Import Group S.A. , www.fitzpatrick.se
SWITZERLAND: Music Network GmbH , www.musicnetwork.ch
TURKEY: BL Muzik Co. Ltd. , www.blmuzik.com
UKRAINE: Real Music Ltd. , www.realmusic.ua
UNITED KINGDOM: Synthax Audio UK Ltd. , www.synthax.co.uk

Asia and Pacific Rim
AUSTRALIA, NEW ZEALAND: Innovative Music Australia Pty Ltd. www.innovativemusic.com.au
CHINA: Central Music Co. , www.centrmus.com
HONG KONG: Central Music (HK) Ltd. , www.centrmus.com.hk
INDIA:
Pace comm , www.pace-mediateck.com
Modi Digital Audio Pvt Ltd. , www.modidigital.com
JAPAN: Synthax Japan , www.synthax.jp
KOREA: MIDI & SOUND Co. Ltd. , www.mnshome.com
INDONESIA: M-Station , www.m-station.biz
THAILAND,KAMBODIA, MALAYSIA:
KDM Trading Co Ltd , www.raajmaan.com
TAIWAN: MidiMall Inc. , www.midimall.com.tw

Middle East
ISRAEL: Music-Shop LTD , www.music-shop.co.il
LIBANON: Ragtime Music Technology , www.newagtime.com
UAE, EMIRATES: Thomsun Trading Est , www.thomsun.ae
IRAN: Raajmaan System Ltd. , www.raajmaan.com

Africa
SOUTH AFRICA: Tuenk Music Technologie , www.tuenkmusic.co.za

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The introduction of digital microphone technology according the AES42 standard into the pro audio sector has not just afforded sound engineers a greater degree of flexibility. AES42 will also revolutionise the way people "microphone".

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At the same time AES42 has also created a demand for a multi-channel interface that can effectively control and handle digital microphones.

Just "microphone" it. With the new 8-channel DMC-842 Digital Microphone Controller RME makes digital microphone technology both manageable and affordable at the same time: The cost of a digital microphone solution now becomes comparable to that of analog solutions and - even better – the worlds of digital and analog microphones can be seamlessly joined together enabling them to benefit from the advantages offered by digital technology: remote switching of characteristics, including signal processing where the sound source is, superb sound quality regardless of cable length and many more features.

The AES42 standard. Remote control of microphone parameters such as: signal gain, phantom power for each channel, sample rate selection, filters, built-in effects (compressor, limiter), mute, directional pattern, status information and much more.

Complete Solution. The DMC-842 includes all major audio interface standards: 8 x AES I/O with up to 192 kHz - ready to plug and play, plus 2 x ADAT outputs (S/MUX capable @ up to 192 kHz). The DMC-842 M also supports the MADI multi-channel standard interface! Ready to daisy chain with up to 7 more DMCs or any other RME MADI interface product. Of course the DMC-842 hi-class analog outputs can also be used simultaneously with all digital I/Os for any monitoring purposes.

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RME
The Art of Interfacing

Runaway Success For Inaugural Integrated Systems Russia

The first Integrated Systems Russia conference and tradeshow closed its doors after delighting exhibitors, visitors and industry commentators alike. After four days of hectic business discussion, product demonstrations and educational sessions co-organisers Integrated Systems Events and MidExpo revealed that more than 7,200 attendees had visited the show at Moscow's Gostiny Dvor convention centre.

"We will look back on this inaugural show as a landmark event in the development of our industry," comments Mike Blackman, Managing Director, Integrated Systems Events. "We always believed that Russia and the CIS countries deserved their own show dedicated to AV and electronic systems integration, and we're delighted to have had that belief confirmed here in Moscow.

"From our industry's point of view, there are two distinct market sectors in Russia – the high-end home/residential market, and the commercial. Both are experiencing considerable growth and a good number of major players have not been slow to realise this. Some have set up their own offices there, while others are linking with established Russian distributors and getting a slice of the action. "What you are now seeing on the commercial front in Russia is a situation where huge amounts of money are flooding into the economy and proprietors, entrepreneurs, and government departments are realising that all their old antiquated equipment can be totally written off and replaced with the latest technologies.

"On the domestic front, the home theatre/cinema sector is becoming increasingly buoyant. There's a lot of new money about, and those that have it want to show off their wealth. Whatever their neighbours have got, they want to go one better – and are prepared to pay for it."

But it's not just the consumers who are spending. The effects of Mikhail Gorbachev's "Glasnost" (openness) and "Perestroika" (reconstruction) are now definitely affecting the Russian AV and systems installation industry. The disintegration of the Soviet Union has created many security issues within and around Russia and other CIS countries.

"What makes things move is the way the Russians do business. They see themselves no longer as pioneers but certainly "adventurers". Offers are demanded immediately and deals are done quickly. The civil servants are keen to spend the newly gained wealth, and satisfy the cities that their infrastructure now works or is better observed," continues Blackman.

Daria Nedumova, MidExpo Project Manager, adds: "We are proud to have hosted such a wide range of exhibitors from all over the world, and to have been able to introduce them to the leading players in Russia's systems integration marketplace."

Reaction on the show floor itself was equally positive. Michael Nevzorov, Regional Manager for the CIS countries at Mitsubishi Electric, reports "a lot of enquiries about our command-and-control solutions from the public sector, but also interest in projectors, flat panels and LED walls from markets such as education, presentation, and digital signage."

A key factor in the show's success was its ability to attract visitors from a wide catchment area. As Koen Pepermans, Managing Director, Vantage EMEA, puts it: "We already have some very successful partners here in Moscow, but what really pleased us is the attendance from elsewhere in Russia and from other CIS countries. I've seen potential customers from Ukraine, Armenia, Kazakhstan, and from as far away as Siberia. I ask myself: 'how else would I have met customers from Siberia if I hadn't done this show?'"

On the eve of the show, a one-day conference entitled 'Professional AudioVisual Solutions in Commercial and Residential Applications' drew more than 200 delegates to Moscow's President Hotel. Topics covered by speakers included market size and growth trends, a focus on specific applications such as healthcare and digital signage, and an insight into local projects such as 'Electronic Moscow', which is rolling out videoconferencing to all key administrative buildings in the city.

Following a period of exhaustive bench testing, premier Russian rental company, NOUK Autograf based in Moscow, has just invested in two InnovaSON Pro FX Sy80 and Sy48 console packages featuring the new FM-8VB plug-in effects modules. The consoles were supplied by StudiTech, InnovaSON's Russian distributor.

According to StudiTech's Nikita Stepanov, Autograf is one of the most highly regarded rental production companies in the country. "They were the first rental company in Russia to invest in really top-class consoles from internationally recognised brands," he explained. "Everything they do is of the highest quality and it is important to them that they maintain those standards. Hence when it came to investing in a new digital console, they saw and tested absolutely everything that was available."

MEDIA MATTERS

In recent years the Kremlin has secured greater control over Russia's big national TV networks – Channel One, RTR, and NTV – and critics say independent reporting has suffered as a result.

Bringing court cases against two of the country's biggest tycoons, Boris Berezovsky and Vladimir Gusinsky, and acting through the giant energy groups Gazprom and Lukoil, the Kremlin wrested control of NTV in 2001 and ordered the closure of TV-6 in 2002.

TV-6 was replaced by TVS, which soldiered on as Russia's only private national network until the authorities pulled the plug in 2003, officially for financial reasons.

Russia's broadcasting market is very competitive; state-owned or influenced TV networks attract the biggest audiences. Hundreds of radio stations crowd the dial; traditional state-run networks compete with music-based commercial FM stations.

An English-language satellite channel, Russia Today, was launched in late 2005. The news-based station is funded by the Kremlin and aims to present "global news from a Russian perspective".

VITAL STATISTICS

FULL NAME	Russian Federation
POPULATION	143.8 million (via UN, 2006)
CAPITAL	Moscow
AREA	517 million sq km (6.6 million sq miles)
MAJOR LANGUAGES	Russian
MONETARY UNIT	1 rouble = 100 kopecks
MAIN EXPORTS	Oil and oil products, natural gas, wood and wood products, metals, chemicals, weapons and military equipment
GNI PER CAPITA	UUS $4,460 (World Bank, 2006)
INTERNET DOMAIN	.ru
INTERNATIONAL DIALLING CODE	+7

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Moscow's Largest Cathedral Installs Heritage

Theatre Technics and Technology (TTT), has supplied a Heritage 2000 console to the Cathedral of Christ the Saviour

The H2000 has been installed into the 1,250-capacity Council Hall of Moscow cathedral, which is used for events ranging from meetings and conferences to orchestral, organ, and choral, and folklore performances. The hall, noted for its beautiful décor, unique architectural features, and Florentine mosaics, is also equipped with state-of-the-art acoustic equipment.

Head of the department of communication for the cathedral fund, Roman Demidov, explains: "The issue of purchasing a mixing console had been going on for about a year, and we'd looked at several models. As the Hall hosts many important events involving chiefs of state and the Russian Orthodox Church, our basic criteria were reliability, sound quality, number of channels, and ease of use without the need for preliminary rehearsals. We decided the optimum solution was the Midas H2000, which can handle a wide range of events with an easy to navigate, ergonomic control surface."

Once the H2000 had been purchased from TTT, it had to be installed within a week's timeframe, keeping disruption to a minimum.

"By joining forces with specialists from TTT, the project came in on time, allowing us to hold our first planned event as scheduled," said Demidov.

TTT also recently installed a dual control surface XL8 Live Performance System into the State Academic Maly Theatre in Moscow, one of the country's oldest theatres, as part of a major renovation project spanning six years. Only minor repairs have been carried out since the 1940s, but last year the Maly was awarded a government grant to refurbish the façade, revitalise artwork, and update the lighting and sound systems.

The historical aspect of the building and its architecture had to be taken into account while updating the technology. "We had to come up with a solution which could provide us with a great number of audio channels with a minimal amount of cabling," says the Maly's head of sound, Alexander Kazarin. "The only solution was to use a digital communication system."

TiMax Audio On Parade In Red Square

The Kremlin Zoria Festival of Military Marching Bands takes to the streets with TiMax Audio.

Moscow's Red Square played host to the debut Kremlin Zoria Festival of Military Marching Bands. Central to the sound reinforcement system, a TiMax Audio Imaging delay matrix enabled the performers' amplified sound to follow their movements around the arena.

Tattoo events around the world follow a long-established template provided by the Edinburgh original. In this respect the inaugural Russian event was no exception. Marching bands from the Moscow Garrison and German Army Corps were joined by Scottish bagpipers and drummers. The event's musical highlights included excerpts from Tchaikovsky and Beethoven, along with a special arrangement of Amazing Grace performed by the band of the British Coldstream Guards.

The sheer dimensions of the Moscow arena, however, added a further challenge for the sound design team, headed by Edinburgh Tattoo veteran John Del'Nero, who has relied upon TiMax for the last eight years in Scotland for its ability to keep pinpoint acoustic focus in what could otherwise be sound chaos.

In Moscow, the system was focused onto the multiple sound sources by first defining them as a number of localisation zones across the arena. These image definition origins were then delay-mapped to each of the loudspeakers and the seating areas they covered. The TiMax matrix and software would then pan sound sources to these multiple locations around the arena as directed, varying delay times so that the Haas precedence effect provided accurate imaging for the audience.

Del'Nero, assisted on site by Associate Sound Designer, Sebastian Frost of Orbital Sound, specified the multi-channel distributed sound system provided by Moscow-based Spin Music, which comprised L-Acoustics' Kudo line array systems in the arena's four corners, with eight pairs of small dV-dosc arrays in nearfield reinforcement locations. Sixteen channels of compact MTD108P cabinets provided extra audience in-fill.

Spin Music rented the 16x16 TiMax Rack System ShowControl PC from Out Board, who had it shipped direct from the Edinburgh Tattoo by Rock-It Cargo with the assistance of sound contractors Wigwam Acoustics.

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For the Record

This month, in this new regular slot, intended to give voice to professionals from all over our industry, we cover audio over IP, the politics of the game sound world, and ways to overcome that digital itch.

Transmission Vamp

If I have any love of France or any joy in its language it's down to Ken Campbell, whose rigour and enthusiasm drove me through schoolboy French and on to the dizzy heights of an ordinary grade qualification. Sadly though, Ken's classes left me ill prepared for dealing with the technicalities of an ISDN installation in Nantes for last year's Rugby World Cup. However with much smiling and pointing the two chain smoking France Telecom engineers installed the circuits with great Gallic aplomb. Our multi-media bus also sports a VSat installation which provides internet access and tidy audio over IP via an Audio-TX STL codec. We had the ISDN installed as we weren't sure of the VSAT coverage so far south, and to cover multiple simultaneous transmissions.

This happy marriage of ISDN and satellite though won't last long. Broadcast audio over ISDN is rapidly entering its twilight phase. Programme makers can now choose from a mix of multiple audio over IP codecs, several satellite options, and the latest in 3G solutions. Rumours abound that temporary ISDN installations, the life blood of the radio OB, are about to cease or to become prohibitively expensive. While across Europe in countries like Sweden, ISDN is on its last legs.

Broadcasting can be a conservative business and new technologies are bound to go through a teething stage, so for many, booking an ISDN is a comforting thought. Ironic really when you think of the chaos that attended the early days of audio over ISDN. Incompatible codecs and mysterious drop outs took many a show off air or even stopped it getting on air in the first place. We had codecs that dropped out on sustained audio peaks and I remember the frustration of being unable to send a stereo item from Pebble Mill in Birmingham to Cardiff as they had RE codecs and we had Primas and the two couldn't be made to talk to each other. We regularly failed to connect to anywhere with a Telos Zephyr despite manufacturer claims of compatibility, so in the end we bought one.

However, there may be a more positive legacy from those early days of ISDN and that is that the broadcasters are not prepared to be locked into proprietary technologies. We want interoperability and we want it now. I don't care if your algorithm is a million times better than G722 if I can't connect to the box in Birmingham that happens to have a different label on the front. The other thing we want is clever boxes that do it all. We know that inside is just a pile of DSP and some code (in fact some codecs are just PCs shoe horned into a rack case) so stick as many interfaces on it as you can. And please, please, please – put a decent display on the front and some buttons for presets. Make things easy for us, not hard.

I for one will not mourn the passing of ISDN. The first contribution I ever engineered failed to connect, leaving my contributor in tears of rage and frustration. I remember vividly multiple failures on the old Morning Service that nearly brought us to our knees. But memory being what it is, I'm sure in 20 years' time I'll be drinking to the good old days of ISDN, the days of wooden ships, and iron men. Come to think of it I don't remember much in my French classes about audio over IP either, but I can manage to order a decent cup of coffee and une tarte au citron. Salut Ken!

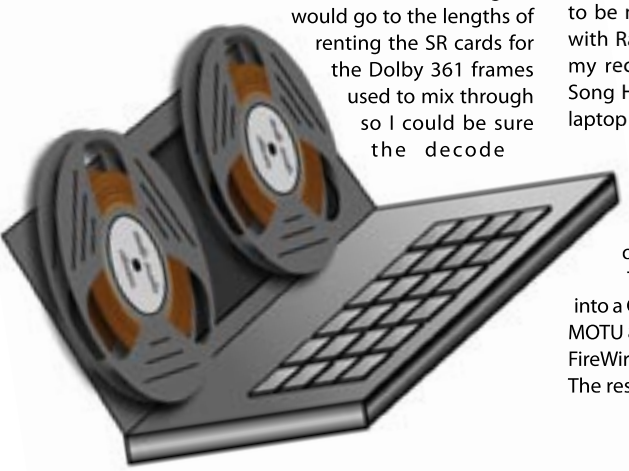
Alistair McGhee, Broadcast Producer

ALISTAIR MCGHEE began audio life in Hi-Fi before joining the BBC as an audio engineer. After ten years in radio and TV, he moved to production. When BBC Choice started, he pioneered personal digital production in television. Alistair is now Assistant Editor, BBC Radio Wales, but is allowed out occasionally.

Bye Bye Analogue Mixing?

For more years than I can remember I have mixed to 1/2" analogue at 250Nwb/M, 15ips with Dolby SR. It almost became a mantra.

The noise floor was wonderfully low, the headroom spectacular, the bass bump luxurious, and the top response clear and precise. My choices had become even more particular. I uncovered the benefits of the Ampex ATR over the Studer and the Otari, especially with bespoke electronics. I discovered that if you encoded with the Dolby 363 then you had to decode through the same unit otherwise the low end was not right. I would go to the lengths of renting the SR cards for the Dolby 361 frames used to mix through so I could be sure the decode was accurate and the process of making safety copies to a DAW of the pre and post SR recording was honed to a fine art.



This of course all depended on the machines being available, the tape being manufactured, and the budget being big enough.

Then one day I did the sums and realised that the total cost of the machine, Dolby rental, and tape was equivalent to another day's mixing – a tough call. So what were the available alternatives?

DAT was completely out of the question for me because even with high-end converters, no-one had produced any 'one box' solutions, so it had to be mixing to a DAW. After lengthy discussion with Ray Staff at Alchemy Soho, who I master all my recordings with, I decided to try the Crane Song HEDD as a converter recording onto my G4 laptop using Bias Peak Pro 5 to capture the audio.

I did encounter some problems finding the most appropriate interface to get into the computer and, after some clocking problems with my Metric Halo, finally settled on a MOTU 896.

The eventual package therefore was mixing into a Cranesong HEDD taking the AES/EBU out into MOTU 896 and feeding the Apple G4 Powerbook via FireWire 400 running Bias Peak 5.2.1 at 96Khz/24 bit. The results were fantastic.

Firstly, the Peak works just like an intelligent tape machine – arm it, record, stop, name and store, and the files created from Peak's sample conversion for CD burning are accurate and reliable. Previewing edits is simple and obviously non-destructive. The Cransesong A/D is superb, and dialling in a modest amount of the tape effect gives me all the warmth and clarity that the 1/2" machine used to provide. The only cumbersome part of the exercise was the requirement for an interface between the HEDD and my computer. I did contact Cransesong to suggest that a built in interface would be useful, but their somewhat puzzling response was that they had 'no plans to do this at this time'.

What I am most pleased about is discovering a solution to a dilemma caused by 'format obsolescence' that not only satisfactorily replaces the old way but really improves on it, both in terms of quality and functionality.

Tony Platt, Producer

In a career spanning more than 30 years, TONY PLATT (www.platinumtones.com) has worked with artists as diverse as Bob Marley, Motorhead, AC/DC, Buddy Guy, Soweto Kinch and The Bad Plus. he completed 2007 by mixing tracks with Alexander Wolfe and is now starting on productions for Jacqui Dankworth, The Tyla Gang and Alison Burns/Martin Taylor. Tony is a director of the Music Producers Guild (UK) - www.mpg.org.uk.

SOMETHING TO SAY?

If you are an audio professional and have something constructive to say about your field of expertise, or tips for your peers, contact us with your ideas at ftr@audiomedia.com

The Clique Track

I hate cliques – cosy gangs that only the select few can join. It started in the playground where the kids with Raleigh Choppers got to hang out together, while the rest of us with single speed roadsters were forced to stand around by the climbing frame. Even during my student days there were the cool people who floated around in a bubble of their own late 1980s grooviness.

I know it's paranoia but it's followed me all the way into adulthood. Ever since I started my own game audio company back in 2000. In the games industry, we're still mere toddlers compared to the grandaddies of film and TV. We're still evolving as an industry and the technology we work with goes through a revolution every five or six years: PlayStation to PS2 to PS3 and Xbox 360. It's like going from monochrome-film-with-a-bloke-playing-piano to HD-widescreen-THX-mega-surround. In a decade.

Because of this, knowledge is power. Share your ideas and techniques too freely and you run the risk of seeing someone else run off with all your glory and quite possibly your job as well. It's impossble to learn from other people's mistakes or to stand on the shoulders of those who've gone before, because no-one knows how they did what they did!

But there's a glimmer of light in all this gloom. Last year, at the Develop conference in Brighton, things kicked off with the Develop awards ceremony, at which Motorstorm, a title that Media Mill worked on, won the gong for Best Original i.p. (even the prizes in this industry have geeky names). One shaky hangover later and I was settling down for the Audio Track, a series of lectures and discussions for those from the sound side of the industry.

Something was wrong. Here were people like the audio team from Bizarre Creations showing the rest of us how they worked on titles like Project Gotham Racing. This couldn't be right: Audio Manager Nik Whiswell taking us through the process of recording vehicle fx, developing software tools, and polishing the final output. Surely someone would put a stop to this madness? But no, it went on. Rob Bridgett, who's been featured in this very magazine, showed how he'd helped develop a post-production system for the Scarface game, that was even mapped to a Mackie Control. Could this really be happening?

Then to cap it all came the key note speaker: one Tommy Tallarico. Anyone billed as a legend, I automatically want to dislike. But damn him, the man who's worked in game sound since 1990 was inspiring, uplifting, and worst of all, instantly likeable. His was a rallying call for downtrodden game audio bods; a morale booster and shot in the arm for those of us who're at the very bottom of the food chain and have to battle with producers, managers, and coders just to get our fair share of the game development pie. I even dared ask a question.

"I get told by developers that if I record some fx for a project of theirs that I'm working on, then they own the raw material."

"That's bullshit."

My God. I love this man.

That's when it struck me. Maybe people are starting to feel confident enough to start talking to each other without fearing that they've just given away the family jewels. OK, so no-one's going to hand over trade secrets, but maybe we're starting to realise a few things.

Even though we all come under the umbrella of "audio", it doesn't mean we're doing the same thing. My company provides sound design and effects for games and animation. We don't do music but we do occassionally record voices. Others are chiefly musicians but might chuck in sound effects if a project needs it. The word's gradually getting round that these are different disciplines and we can even pass work on to each other. And even if someone's doing the same work as me, if there's enough to go round then what's the problem with at least chatting to each other? If the industry gets to be so shaky that we're desperately fighting over work, then frankly it's time we all found other employment.

Jerry Ibbotsen, Studio Owner

JERRY IBBOTSEN runs Media Mill, a York-based audio production company started in 2000 that specialises in sound for video games. Prior to this, Jerry was a BBC journalist for ten years, ending his spell with the Beeb as a reporter and newsreader at Radio One Newsbeat.

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WAVES GTR3

SOFTWARE SIMULATOR

Trying to banish flashbacks of Lycra to the back of his mind, SIMON TILLBROOK steps up with Waves GTR3 to find out if GTR2's enjoyment factor carries over even without the skin-tight body wrapping.

Waves GTR2.0 was reviewed by our Lycra-clad Editor (a vision I still struggle with) back in October 2006, and was clearly enjoyed as it provided a wide range of tonal and effect options, so I was looking forward to seeing what Waves has done with the latest version of this software simulator Waves GTR3.

Overview

Waves GTR3 was developed with PRS (Paul Reed Smith) guitars, taking a wide variety of amplifiers and microphone combinations and modelling them in the studio for use within GTR3.

Previous versions of Waves GTR sims have included a number of amplifiers, stomp boxes (pedal FX), cabinets and microphone setups. Waves GTR3 expands upon these and adds a few more features.

You now have a choice of 19 classic and contemporary amplifiers, and seven new bass amplifiers. These are split into four different general categories: Clean, Drive, High Gain, and Bass. Each of these then accesses a sub menu where you can choose the type of amplifier you want by way of sound descriptive labelling. Under 'Clean', for example, you can choose 'Warm' or 'Sweet', and if you feel a little more aggressive then perhaps one of the High Gain options such as 'Shredder' or 'Monster'… You get the general idea.

You have 22 cabinet options available (previously 15) for use with any of the amplifiers; this includes an option for no cabinet at all. These include both open and closed back cabinet designs with speaker sizes eight, 10, 12, and 15 inches in single and multiple configurations for both lead and bass guitars.

You can listen to the result of the output of your amplifier or cabinet via one of 11 microphones. These include ribbon, condenser, and dynamic designs by manufacturers such as Neumann, AKG, Sennheiser, and RCA. As well as the microphone, you can select an on or off axis position.

A full range of 26 stomp boxes covering virtually every process angle are included with Waves GTR3. These now include three new stomp box options of a bass pitch shifter, volume control pedal, and a new compressor.

In order to get your live source signal into the Waves GTR3 setup you have the option of a hardware high impedance DI box which can feed your instrument/line level signal into your chosen audio interface through balanced line or microphone inputs.

Stand Alone

With Waves GTR3, you are no longer reliant on a host application to run it. GTR3 can run stand-alone with an all-in-one tool rack interface with up to two amplifiers and six stomp boxes in any signal flow order you wish. As well as placing your chosen amplifier and effects, you can select to connect them together differently on each side of your amplifier setup. You have the option to cascade, run in parallel, or split both pre and post your amplifier(s).

The interface is very clear and easily controlled. The amplifier head has all the controls you would expect to see presented in a true vintage layout. Drop down boxes allow us to select the cabinet option we would prefer and choice of microphone and relative position. Phase switching and delay settings are also laid out on the front panel of the amplifier for use with phase glide between multiple amplifier setups.

Stomp boxes are graphically presented as hardware pedals, and a connection view lets us see how each of the stomp boxes and amplifiers are linked together. The tuner can be pulled up at any time from the stomp box view.

The PRS DI box can be powered by either the two supplied 9V batteries or an optional 12VDC power supply that plugs in the rear. The rear also has the on/off switch and output connectors. Both balanced XLR and unbalanced TS connectors are here with a switch for the XLR that selects between mic and line outputs. The XLR also has a ground lift switch to combat those earth hum issues if they arise.

Time To Play

For testing, I was fortunate enough to have a session guitarist friend available to help me out. One who has some issues with software simulators, so this was going to be an interesting experience at the very least.

We tried the Waves GTR3 in both stand-alone mode and as a plug-in in Pro Tools LE and HD. It can be quite daunting initially as you are confronted with so many possibilities. The presets are a very good place to start, and time spent running through these to get a feel for the potential results is time very well spent. The only problem you will really encounter is the lack of hours in the day you have. Time does accelerate quite substantially when you start using GTR3.

The sound is very impressive to my ears with excellent levels of subtle control over virtually every aspect of the setup. One area I was keen to try was how GTR3 coped with variations in the dynamics of performance.

With my capable friend plugged in, we ran through various configurations from the very clean, warm sounds, to gritty hard-edged rock. Subtle changes in the dynamic performance were very realistically represented through GTR3. Both my sceptical guitarist and I had to admit that throughout the sound range GTR3 was very good indeed. This was also reflected with the bass setups as well. Nice full-blooded bass with simple straightforward tonal colour control.

Conclusion

As a studio tool for guitar amplifier and processor emulation, Waves GTR3 is a hard act to beat. This is a real step up from GTR2.0 with more of everything expanding an already impressive array of configuration possibilities. From my guitarist friend's point of view, Waves GTR3 is a fabulous studio tool. Sounds are good and dynamic performance representation impressive… all I have to do now is figure out a way to get them off my rig!

INFORMATION

£ GTR Native from GB£295.00 (software only)

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Ⓣ +972 3608 4113
Ⓦ www.waves.com

Ⓦ Sonic Distribution Limited Unit 23 Westbury Close, Townsend Industrial Estate, Houghton Regis, LU5 5BL, UK
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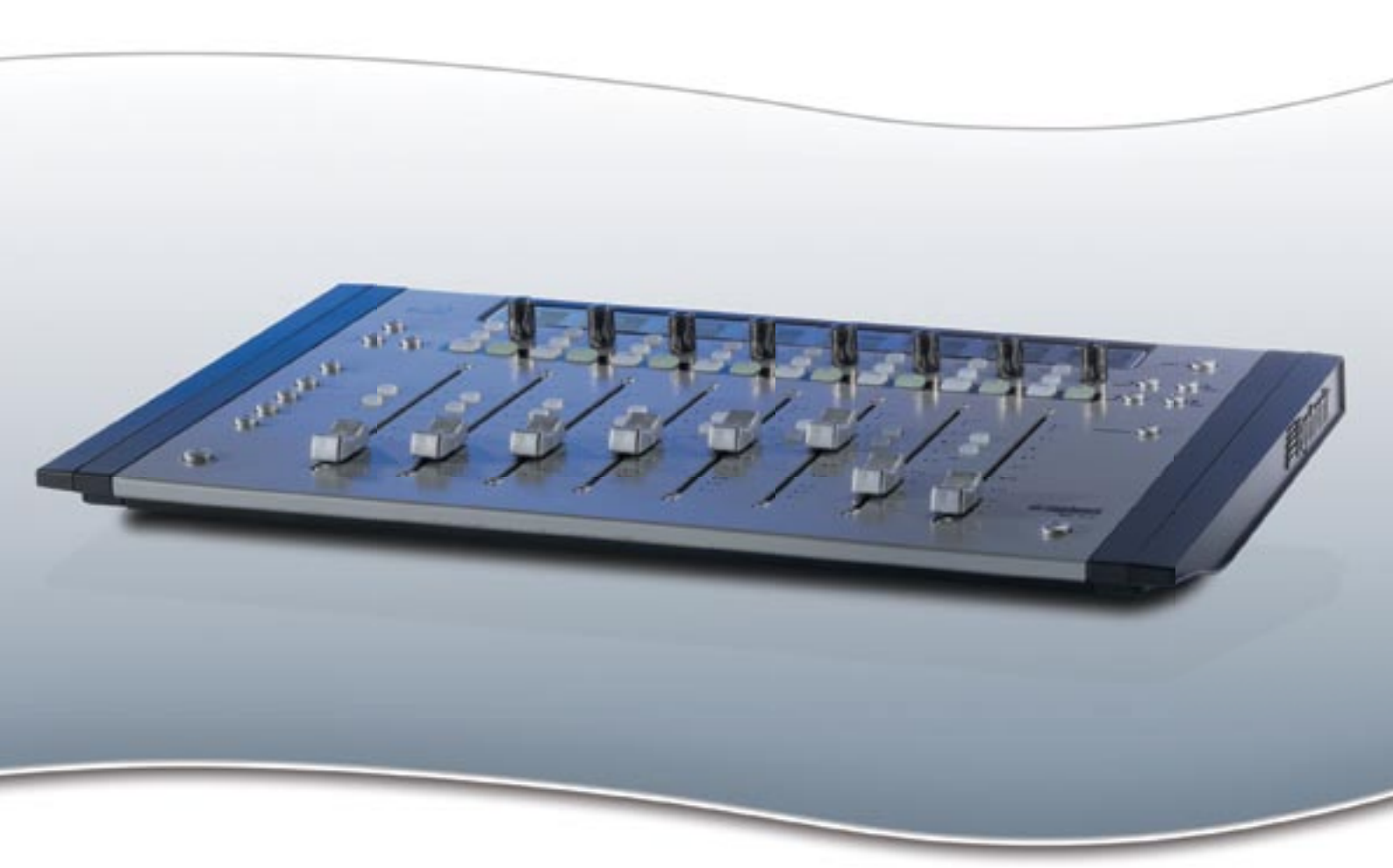
THE REVIEWER

Simon Tillbrook is the Principal Music Tutor at Islington Music Workshop in London. The rest of his time is spent as a freelance engineer, mainly in the USA.



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Mac Universal

20 YEARS

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DANGEROUS MUSIC MONITOR ST

MONITOR CONTROLLER

The Dangerous Monitor ST is one of a small handful of the top processors in the specialised category of monitor controllers. Why so much fuss over a volume knob? Within minutes of my first listen, the DMST was schooling me on what studio monitoring can be. The DMST audio path is solely analogue, no VCAs, and no digital.

Features

The Dangerous Monitor ST remote is drop dead gorgeous. Its shape is an aluminum bridge, a low arc combined with a gradual, banked curve. Its brushed chassis is an aesthetic extension of your Apple 23- or 30-inch Cinema Display, and the switches glow gumball red, orange, green, or blue, according to their function, and jump in intensity when engaged.

No audio runs through the remote; it is the desktop command center, requiring simply a single shielded Ethernet cable link. If you end up having to extend the location of the remote past the included 25 feet of CAT5e like I did, make sure you stick with a shielded cable.

The main features of the remote include switching for three sets of speakers (along with subwoofer in or out); four analogue inputs with gain control; auxiliary input; talkback, per-speaker mute/solo, mono, dim, and set-up mode buttons, and a volume control. Everything is so well laid out and color coordinated that it takes minutes to get a full grasp. There are four additional switching buttons ready for DMST expansion offerings. Setup mode offers speaker set offsets, gain settings for inputs, and subwoofer active/inactive settings.

The rack unit features continuously variable gain controls for the headphone jack, aux to main and cue, main to cue, and input four (for quickly matching levels between a mastered CD to your mix in progress, for example). There's not only a built-in talkback mic on the front, but a jack on the back for your own, if you like. Also on the back are the aux ins, slate out, and cue amp out XLRs, and the two 25-pin D-Subs for I/O. There's even a built-in 40W headphone amp. D-Subs can be a pain, but this couldn't be a 1U box of all the available ins and outs if they were XLRs.

A solid talkback system, the dim function, and selectable speaker mutes reveal the frame of reference from which the functionality DMST was designed; it was to be a robust, no compromise console monitoring section for your desktop. For those who are tracking and using cue mixes, the DMST is flexible and powerful. I use the DMST in a non-tracking control room, so I use the headphone system only as an additional reference, not an artist cue.

The DMST offers a wonderfully flexible, and, to my knowledge, unique feature amongst other monitor controllers in this league: a mixable input. The aux in can mix in a single stereo audio signal to the monitor path. It has a separate level control on the front of the rack unit and dedicated XLRs, as opposed to inputs, on the D-Sub connector in back. It was designed with the idea of mixing in a click track, for example, for the musicians on the other end of the cue amp output. Two knobs on the rack unit allow for tailoring the amount going to the headphones versus the speakers, meaning the recording engineer doesn't have to listen to the click at all – hallelujah.

Many users will be well accommodated by a stock Monitor ST. Yet Dangerous designed the DMST to be obsolescence proof. The first, and currently available, major ST companion is the SR, a 5.1 surround monitoring router maintaining four multi-channel analogue inputs and providing switching between two 5.1 and one 2.1 speaker sets. Further expansion is possible via the Additional Switching System (watch out for that acronym), which can provide multiple input listening, 2.1 subwoofer management, surround bass management, digital surround input monitoring, 5.1 fold-down, video switching, 2- and 6-channel D/A conversion, even digital source monitoring and digital input switching with either the stereo or 5.1 DAC. It's good to know that this plug-and-play monitoring box of singular, pure analogue purpose is the foundation of an expandable, highly flexible analogue and digital monitoring control centre.

Over the years, I have sometimes used an NS10-esque justification for limitations in my monitoring chain: "If I can make my mix sound great monitoring through this cheap mixer, it will sound really awesome on good systems. Besides, it's just a volume control." I worked hard and my mixes did sound good elsewhere. Did I mention I worked hard? Clinging to this justification made my work so much harder.

Fighting the illusions caused by bad stuff in the monitor path has the potential to hold anyone's mixes under a glass ceiling. Let's dispel the myth: the only way to make the best sonic decisions is to come as close as possible to understanding what is actually there.

Conclusion

I confess, with bad monitoring I've killed warmth, over-panned, over-carved, mis-carved, de-essed too much, and over-compressed, to name a few. As soon as I started mixing with the Dangerous Monitor ST, I could more easily distinguish nuances within tones. I found myself making better choices about how to correct the bad and enhance the good, which can mean doing nothing at all. Starting to believe your plug-ins all sound the same? You'll be able to tell more differences between the same old algorithms listening through the Dangerous. A few days after I set up my new Dangerous Monitor ST, I mastered an album in about an hour. The clients and the producer loved it. I felt confident that I was hearing what was really going on.

INFORMATION

(£) Monitor ST GB£1,375.00 (exc.VAT)/US$2,199.00, Monitor SR Expander GB£1,000.00 (exc.VAT)/US$1,499.00

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THE REVIEWER

ALEX OANA is a new dad. He's also an independent, award-winning mixer/engineer, and mixes music for Asche&Spencer in Los Angeles.

Light **Metal**

No other tool in the professional recording chain has more stringent requirements than the audio monitor – it is the last piece of an often complicated chain of events. At Genelec our goal is to deliver these sound experiences to you as they are intended by the original performer. Genelec active monitoring technologies, including our die-cast aluminum enclosure, offer you an undistorted, dynamic and natural sound without adding or removing anything from the electronic signal. No matter how heavy your recording sessions are, discover the Genelec system that suits your needs at **www.genelec.com**

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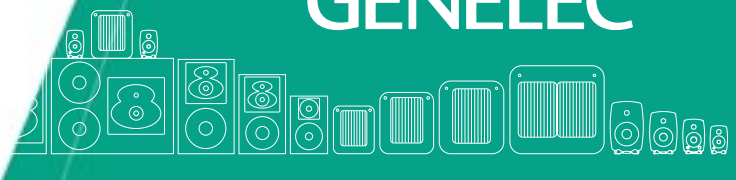

MIKE SKEET levels up Sennheiser's MKH 8000 series, to find just how big a step forward the MKH line of mics has taken.

SENNHEISER MKH 8000

RF CONDENSER MICROPHONE SERIES

With the introduction of the Sennheiser MKH8000 series of microphones, in effect, the earlier still on-going and well respected range of MKH20, MKH40, and MKH50 models are now available physically smaller and offering greater flexibility in use.

Despite the slimmer body, I am told the diaphragm diameter is the same as in the original MKH range. Some 20 years on, this, and the body length reduction, is due to the development of smaller surface mount components, and an innovative and space saving technology for the well established symmetrical capsule design.

The Sennheiser MKH range makes use of 'RF' polarising of its diaphragms, as opposed to a DC voltage. A very practical aspect of this has always been the tolerance of the MKH range to humid conditions and condensation.

Pictured is the MKH 8040 cardioid head in the MZH 8000 Auditorium Hanger.

The Physicals

As well as the reduction in size, one of the first things you notice about the new range is that almost half the length is an un-screwable XLR module. The detached complete mic head is then even smaller for a range of practical uses. A supplied booklet shows the many accessories available to facilitate this. There are extension tubes, table stands, and remote cable lengths. These carry the usual audio signal from the mic head at one end, to the XLR module used at the other. It is not like the earlier 'detached capsule' concept, where it was just the capsule signal that was taken to the rest of the mic body.

The 8020 kit that I had for review comes in a lockable aluminium, foam lined case, and consists of two Omni mics, two stand clips, and two 'double foam' windshields. With these, more 'open' foam is used on the inside, with a spacing from the denser foam on the outside. Of course, omni mics are so much less susceptible to air movement disturbance or handling noise than any directional microphone.

The mic body colour is a non reflective grey, and slightly darker than the grey Schoeps microphones are famous for!

Initial Comparisons

When I make comparisons with other mics, the first thing I do is get the same levels from the two being compared. Using Frank Fox's 'The Box' with its 100 LEDs you get a vertical centre line, when the gains match, from the panned left and right feeds, the mics being as close together as possible. Then you can pan both centrally and switch alternately to judge any timbre differences from as many sources as you wish to try. On the level differences, I found that the review MKH8020 was within a dB of an early variable polar pattern MKH80 in omni mode. Compared to a DPA4006 omni you have a 12dB higher output, and with a Schoeps CCM2 'flat' omni, you have some 7dB greater output level.

I have to say that these comparison tests across all three comparisons are very encouraging, not just for the review product, but showing that there is a growing uniformity in the high-end omni world. The Schoeps comparison did show a very subtle presence in the upper HF band, the others showing very few, small differences.

I do not have an original MKH20, however a later stereo comparison at a piano recording was possible. The three MKH8000 range models currently available are quoted as having HF frequency responses above the 20kHz limit we are used to. There is, of course, a great debate as to whether this extra octave is of much consequence!

The MKH8020 review model has the very low noise floor associated with the previous models. Bear in mind that the higher outputs of these MKH products, compared to some other capacitor, ribbon, and moving coil mics, will reduce the noise contribution of the mic amps in our desks or recorders, dependent on the SPL being recorded, of course.

Stereo Use Of The MKH8020 Omnis

Generally I am not a great fan of using spaced omnis in my field of classical recording, except for capturing a grand piano. 'Foggy' imaging is my usual concern, but pianos using a pair between 30-60cm apart really works.

I have even compared my usual M&S approach, with an omni Mid mic, to a spaced pair of the same omnis either side of the M&S pair, at a piano recital in London's Wigmore Hall. The mic stand was towards the 'tail' of the piano some two to three metres back and high enough to reduce possible lid reflections. Comparing the two rigs did show so little difference, that one could edit between the two recordings.

In the review period, it was possible in St Peter's Church in St. Albans to simultaneously record a Bosendorf piano, played by composer John McLain, with the review pair and a pair of MKH20s, brought along by my colleague Philip Stokes – both similarly spaced on the same mic stand and fed to a battery powered Edirol R4-Pro.

Both pairs do honestly sound exactly the same – the Edirol allowing you to silently switch between the two pairs. The upshot of making that comparison with a piano recording, was that I was then able to borrow the MKH20s to do the same at an acoustic guitar and vocal session, with songwriter George Howett.

Again the comparisons were so, so similar, and did open my ears to the use of horizontally placed 30cm spaced omnis for acoustic pick up of voice and guitar!

Final Take

With the reduced size omni, cardioid, and super-cardioids so far available in the MKH8000 range, plus a range of useful accessories allowing just the mic head to be visible, this new Sennheiser brand indeed goes forward.

I had excellent results, and to some an extra octave of HF will make the difference. My only request is that an MKH8030 figure-of-eight be in mind, as well as the promised AES42 Digital Module, plus Pad and Switch Modules. Onwards and upwards.

INFORMATION

£ GB£745.00 (exc. VAT), stereo set £1,395.00 (exc.VAT) (MKH 8020, 8040, and 8050, all same price)

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THE REVIEWER

MIKE SKEET is an experienced location music recordist who knows more about microphones and stereo recording than most, and is currently spending a lot of time recording in surround.

What do they have in common?

Stephen Street with Audient & RADAR recording New Order on location with mobile setup.

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SWEENEY TODD

THE DEMON BARBER OF FLEET STREET

Bringing the dark and Gothic world of Sweeney Todd from Broadway to Hollywood, KEVIN HILTON talks to Mike Higham about making a very different type of musical.

In a classic example of subject and interpreter coming together, Tim Burton's big screen version of Stephen Sondheim's musical *Sweeney Todd, The Demon Barber of Fleet Street* opened to enthusiastic reviews at the end of January. The story is dark and Gothic, lending itself perfectly to Burton's stylised, unsettling view of the world. *Chicago* proved that filmed musicals can still do box office business but this is a different proposition altogether and demanded an intricate sound production to make Sondheim's sometimes difficult music accessible to a wider audience.

Sweeney Todd, with score and lyrics by Sondheim and a libretto by Hugh Wheeler, was first produced on Broadway in 1979, directed by Hal Prince. In this version Todd, a barber, returns to London, having been falsely convicted and transported to Australia 15 years before by Judge Turpin, who raped Sweeney's wife and is now guardian of his daughter. Driven to distraction Todd slits the throats of several unfortunate customers, giving the flesh to Mrs Lovett, who sees an improvement in the fortunes of her pie shop.

A TV movie of the Sondheim musical was made in 1982 but that was strictly a record of the stage production, preserving the performance of Angela Lansbury as Mrs Lovett. Mike Higham, who produced the music for the new cinema version, says from the outset Tim Burton was adamant he did not want to make a musical. "His first words to me were that he wanted it to be like a silent movie," says Higham, "not like a traditional filmed musical when people suddenly burst into song."

Sweeney Todd is Mike Higham's third film with Tim Burton, after *The Corpse Bride* and *Charlie and the Chocolate Factory*, and, working with his regular engineer Andy Richards, he managed all aspects of the music recording process. Writer John Logan, whose credits include *Gladiator*, condensed the 40 song stage show into a 116 minute film with 28 musical numbers and a smattering of linking dialogue.

The cynical thought is that Johnny Depp and Helena Bonham Carter would be cast automatically in a Tim Burton film but both had to audition for Stephen Sondheim. After winning the composer's approval they had to not only learn the parts but also work out the characters and how to play them. To help with this Higham prepared temporary MIDI versions of the songs, which were particularly useful to Depp, who was finishing shooting *Pirates of the Caribbean: At World's End.*

Higham and Richards agree that a great deal of the character performance was worked out by the lead actors in the recording studio. "Certainly for Johnny, how he played Sweeney for film went with performing Stephen Sondheim's songs and not wanting to under-sing or go over the top," says Higham. Richards adds that as a very visual director Tim Burton had in his mind how the characters would look and behave and so wanted the vocal performances to match that: "Tim was certain he didn't want an operatic style, which was how the stage productions had been."

Going For An Air Cut

Preparations for the film began at the end of 2006. The orchestral recordings took four days at AIR Lyndhurst, beginning on June 8, 2007. Arrangements for the 78-piece orchestra were by Sondheim's orchestrator, Jonathan Tunick, conducted by Paul Gemignani, who has been at the podium for all Broadway productions of *Sweeney Todd.*

These sessions were engineered by Jake Jackson, assisted by Chris Barrett, with pick-ups recorded later by Geoff Foster. Higham realised that coming to AIR and working with a full orchestra could be intimidating even for international film actors like Helena Bonham Carter and Alan Rickman, who plays Judge Turpin, so he had a booth set up away from the main studio and gave the performers the option of attending and singing along if they wanted.

Everybody, including Johnny Depp, took this opportunity but any vocals recorded were strictly guides. The master vocal tracks were recorded at Andy Richards' Out of Eden studio in west London, with the exception of Depp, who performed at Metropolis and Olympic studios.

Higham and Richards used Out of Eden's Fairlight DREAM system, working in conjunction with a Digidesign Pro Tools to give 128 tracks. The vocals were recorded with a Brauner VM1 valve microphone, to give quality and clarity on the voices but also a consistent sound and ambience. "We didn't want anything to be too closed in," ▸

comments Richards. "Although Johnny Depp was recorded elsewhere and the rooms were different to ours, I worked to make the recordings feel like they were coming from the same place."

Tim Burton received CDs as work progressed to check that the music still matched his vision. The performers also needed to hear how they were progressing but that posed a question over security. The ingenious solution was to give each member of the cast his or her own iPod, containing just their parts and nobody else's. Other than the actors the only people who heard everything were Higham, Richards, and Burton.

The filming of *Sweeney Todd* did not start until a proportion of the soundtrack had been finished. This meant the actors could lip-sync to the final version of a song but also that Higham and Richards had tight deadlines to meet so they would not hold up the shooting schedule.

Shampoo On Set

Like many of Burton's other features the film was shot at Pinewood Studios in Buckinghamshire. Higham was on set everyday, with his assistant, Music Editor Sam Southwick, running play-back. Richards prepared mixes of the backing tracks, with the original vocals as guides. To try to get the best possible audio quality on the big stages, several small loudspeakers were placed around the set, close to the actors. Higham also worked closely with Production Sound Mixer Tony Dawe, who supplied the necessary monitors. Dawe also devised a radio receiver that allowed Higham, who lay on the floor during takes to watch that the actor's lips matched the pre-recorded vocals, to hear both the original recording and what was being sung live. The singing on set was never to be used but it allowed the movement of the actors' throat muscles to look natural and in keeping with the soundtrack.

There is not much spoken dialogue in the film; Burton wanted the music to be almost continual but there are some lines that are crucial to the plot and they have to slot in between the singing. When lines were due to be delivered the play-back was pulled down so that the dialogue would be clean. Johnny Depp wore an ear piece and was given two to four clicks to cue him back into a song. "We really had to be together for that," says Higham. "Tim Burton doesn't suffer fools and he can work with the best people in the world, so the music had to be brought in and out right on the nose."

Barber's Sync

Higham worked with Chris Lebenzon, Burton's film editor since *Batman Returns*, to ensure that the vocals matched the mouth movements. Where adjustments had to be made Waves software was used to obtain lip sync. Higham and Richards finished up with approx.120 mixes on the go, stored on 750G drives with names such as 'Godzilla' and 'Hulk' to signify their gigantic nature. The entire project took 4TB of storage, not including what was on the Fairlight.

Mike Higham and Andy Richards.

The songs were mixed in 5.1 but Richards says he does not like to have the music filling all the loudspeakers and so works on a similar principle to recording with a Decca Tree, having the LCR at the front and the reverb at the back. "The dialogue will be in the centre channel, the effects LCR and the music will start at the front and work to the back," he explains. The mix for the soundtrack album is folded down stereo but still gives the sensation of wrapping around at the edges.

Shooting progressed through May and final music mixes took place at Out of Eden until the middle of October. Then Higham and Southwick went to the US for dubbing and, as Eden Studios had been sold, Richards moved his equipment to the back room of his flat in Chiswick. Communicating over iChat and sending material via FTP sites, Higham and Richards completed any fixes necessary, using the same equipment.

The sound design on *Sweeney Todd* takes a secondary role to the music but in the sequences where there is no singing it does help set scene and mood. Steve Boeddeker was the sound designer, working with, among others, supervising sound editor David Evans and supervising dialogue ADR editor Stefan Henrix. The six week dub took place at Sound 1 in New York, with re-recording mixers Michael Semanick and Tom Johnson.

Organ Donor

The film has a particularly ear-catching, typically Tim Burton-Gothic opening. Sondheim wrote an organ prelude to begin the stage show but this was usually played in the pit orchestra on an electronic instrument. Higham wanted a real pipe organ and wrote to the authorities at various English cathedrals, with no luck. He mentioned the problem to Richards, who had been a scholar at Rugby School, home to an organ with 32-feet pipes.

Richards contacted the present headmaster and, after an absence of 37 years, went back to his old school, accompanied by Higham and AIR recording engineer Rupert Coulson. And an initially reluctant but ultimately very pleased Tim Burton. Richards played the opening piece, which he says is "true Hammer Horror and what Tim Burton is about".

Sweeney Todd, The Demon Barber of Fleet Street is very much what Tim Burton and Johnny Depp are about and, refreshingly, cinema audiences have embraced the film, helping to perpetuate the myth of Old Cut 'Em Up for a new generation.

Project:

Director: Tim Burton
Composer: Stephen Sondheim
Music Producer: Mike Higham
Sound Engineer: Andy Richards
Music Editor: Sam Southwick
Production Sound Mixer: Tony Dawe
Sound Designer: Steve Boeddeker
Supervising Sound Editor: David Evans
Re-Recording Mixers: Michael Semanick, Tom Johnson
Report: Kevin Hilton

BEATSTREET PRODUCTIONS

NEW YORK CITY

STROTHER BULLINS follows the beat of the street to talk to Joe Franco of Beatstreet Productions.

Undoubtedly, Joe Franco is the beat of Beatstreet Productions, a thriving full-service music and audio post facility in the Flatiron District of New York City. A lifelong musician – a marquee-name, first-call professional drummer respected industry-wide, to be exact – Franco has been providing the beat for his happy clients for decades. From his industry start as a member of NYC's beloved The Good Rats, Franco soon branched out as a session drummer for all kinds of high-profile clients, including Twisted Sister, Hall & Oates, Celine Dion, Mariah Carey, and many more.

Over the years, Franco continued to evolve further, developing as an able musician, producer, sound designer, composer, and studio owner, which gave him the drive to venture into composition for video and film when he had the opportunity. Once again, as proven in Franco's own history, an able-bodied try became another serious gig.

Joe Franco, Beatstreet boss.

Currently, Franco brings his rhythms to a more diverse audience than ever, and increasingly in the form of musical themes, compositions, and performances for television programming.

Beat And Sesame

At Beatstreet, children's programming clients abound. This is largely due to Franco's own entry into the field, where Beatstreet caught its first big fish of a client in the form of *Sesame Street*, the flagship television show of American public television.

Beatstreet may literally reside at 928 Broadway, but its essence is somewhere on *Sesame* – a great place for a full-service, independent audio post facility to grow up. "We do a lot of work in children's programming," offers Franco. "About 20 years ago, I became involved in children's programming by two friends – Chris Cerf and Paul Jacobs – who were writing for *Sesame Street*. The show had a house band but they would hire me for various direct-to-VHS projects; I did drums and drum programming for these. In 1998, Chris and Paul became involved in a new show that needed a drummer – *Between The Lions* – a show that we still do."

Cerf and Jacobs were invited over to Joe's studio, which, in 1995, had evolved from simply a drum rehearsal room and personal composition/production space to a capable private studio. They were impressed enough to become Beatstreet's first full-time client in the children's programming genre. "That started the whole children's programming thing for me," recalls Franco. "That show had so many independent animators and producers – all of who were involved in other shows. Right now we're juggling seven different children's shows."

The growth went from there. "Later, we added a second room, and, most recently, a third room," Franco explains. "It went from composing music and playing drums to doing full-on audio post. We have a great staff here – a great group of young engineers that all love what they do. We're involved in every aspect of audio post: VO recording, sound effects and Foley, full 5.1 surround mixes and laybacks. And, we still make records… but unfortunately that's not what pays the bills."

An SNS storage solution has meant pain-free production at Beatstreet.

All Around The Lions

Joe's history as a studio drummer has given him top-to-bottom, personal experience of the skills involved in crafting superior audio components for a video-

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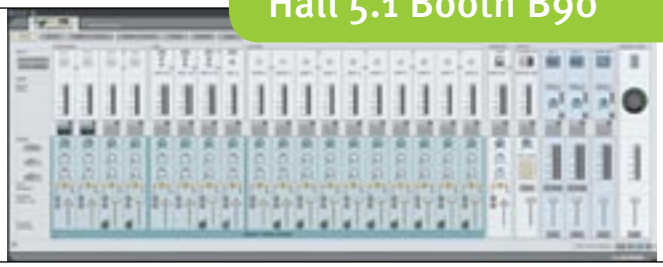

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centric, youth-oriented, pop-art delivery system, a.k.a. television. For proof, look no further than a distracted three-year-old's head turning for the telly when a *Between The Lions* song starts to play. Clearly, Joe and Co. know how to record "hooks" for all ages.

"*Between The Lions* is the best example of what we do," tells Franco. "The show combines live action, music video, puppets, and animation. There's a pre-record for songs and music videos that will be lip-synced on the set. They need to be recorded first and this process is no different than making records. We have a terrific Music Composer/Director, Paul Jacobs, and an amazing house band. For vocals, we use whoever's right for the track. We've had rockers like Joe Lynn Turner and legends like Leon Redbone. We've also recorded tracks for artists such as India Arie and Brian McKnight who sing on the set. All the voiceovers for animation segments are also part of our pre-record. Then when we get the finished animation, we start the audio post and music post process, where we'll score and sound design these segments. A fun part for me is putting together interlude music that weaves in and out of the segments. This is totally percussion and drum-oriented. Then we mix and layback to Digibeta for delivery to PBS."

"For TV programming, the entire process of music and audio post is much more rewarding than simply doing music. Bringing the picture to life requires the right combination of music, SFX, and mixing, and having a show where we're allowed to do out thing is a blessing. When we view our mixes for this series for our clients, we get through at least five shows a day! When you're that in sync with those who hire you, it never feels like work."

The band-oriented recording process, not to mention the gear necessary to operate as a high quality, full-band tracking facility, is what keeps audio production for Between The Lion so 'live'. On the flip side, the creative freedom of sound design possibilities provide all the options of the virtual audio world.

Getting Into Audio Post

Before opening Beatstreet, Franco had long been working for video-based clients who needed music, so chasing video wasn't a new thing. "In the early 90s, we used to score to picture with a VCR tape that had a timecode on one side, and mono audio the other, chasing the VCR with the sequencer," he begins. "But once you were able to throw QuickTime movies into a sequencer, and finally have a programme like Pro Tools, this all became more fun. Having non-linear, random access video was a big thing. Granted, [this development] was 15 years ago, but coming from the humble beginnings of chasing tape, throwing a QuickTime into a sequencer really made life easy."

At this point, having sequencing ability allowed Franco to better develop his musical and sound design ideas to present to clients and fellow musicians. "You didn't have to be a killer keyboard player to get your ideas down," he explains. "I'm a drummer who knows a bit about chord changes and have a decent ear, but if I had to actually play piano for one to show them ideas, it would be intimidating. Sequencers made it very comfortable for someone to articulate their ideas. Once the ideas are put down in MIDI, you have players come in and play it."

When he recognised that he had most of the physical requirements for audio post work – a better than decent modern DAW-based studio – he was essentially ready to launch Beatstreet. "At first, I was the guy doing music and taking my DAT tapes to the big post houses, looking at their rigs, and saying, 'Well, geez. I have better mic pres, better compressors, and engineers that are doing the hard work from miking the kit to doing music mixes with a tonne of tracks, but the post house is doing the final product of which music is an important part, but certainly not the whole picture. I really wanted *that* job, the final step in the process. So I went about hiring an experienced audio post mixer who we all learned from. Besides SFX, Foley, and mixing, doing audio post involves setting up a bunch of templates to route different things to different places. You're not simply involved with a stereo music mix. You're involved in a series of stems, voices, effects, and so on."

More Data, More Storage

With six Digidesign Pro Tools rigs – three HD systems fronted by two Pro Controls and one ICON console, and three LE composition rigs – Beatstreet produces an incredible amount of data. "The LE rigs are used for sound design and dialogue editing, while the HD rigs are used for full-tilt recording and mixing," explains Franco.

As such, it became clear that SCSI storage wasn't cutting it anymore, and the studio needed to do something more efficient for its data storage and sharing needs. "We were on borrowed time with SCSI," tells Franco. "Twelve years ago, when we bought our first Glyph hotswaps, it was the coolest thing at the time. But we just opened a new studio, a mix room on the floor below our current studio, that houses two more Pro Tools rigs. We could see that it was going to be the case of, 'Where's that drive? Is it upstairs, or downstairs?' It had become tedious working the way we were working. I looked at the options, and I gravitated to a fibre channel network."

Studio Network Solutions, the shared storage hardware and software solution company, was called on to design a system for Beatstreet. Caspian Brand, Product Specialist for Studio Network Solutions, worked closely with Beatstreet on this project.

"Beatstreet came to us looking for a SAN," Brand remembers. "We're synonymous with storage area networks when it comes to Pro Tools, as we've been doing that for years. They were expanding their facility, adding more rooms that are not all conjoined, so it made good sense. They wanted to minimise how many SCSI drives they were shuttling from room to room. They also wanted to create a volume on each SAN for each client. As the projects move through the production process – whether they're capturing reference video, doing some basic cleanup editing or music design, recording and mixing – being able to instantly mount that volume in any of the rooms was a priority. Also, the peace of mind that everything was redundantly distributed across multiple discs was a need. Those were the main solutions that we provided to them."

Chosen was a 500-channel, 4GB fibre channel solution with a single RAID controller and 16 bay drives. "A 4GB fibre-optic switch ties all the clients and storage together in the same fabric," explains Brand. "They all have 4GB of through-put, switched to the storage, so there's plenty of bandwidth for both reference video and audio performance with enough simultaneous tracks for various jobs at the same time."

SNS's "end to end" solution means that the firm provides a host bus with adapter cards for each CPU for network connectivity, redundantly distributed data storage across multiple discs for minimised drive failures, and SAN management software. "We installed all the hardware, computers, software, and provided on-site training to get everyone up to speed," says Brand.

In the end, this data solution is completely transparent and ultimately flexible. "We never even think about storage," Franco illustrates, "but the SNS system is in our machine room with six machines reading and writing to it. If a drive goes out, you can work off the backup while the first drive rebuilds. Yes, this upgrade was pretty much a no-brainer."

Road Dog To Lion Tamer

"I was a road dog for how long," concludes Franco. "You get into your mid-40s and you don't want to travel anymore. I really wanted to stay in New York City because I was born and raised here, and love it. Also the rock scene is a young man's game, and I have a wife and two kids now, and want to be here with them. Beatstreet has been around for 13 years now, and it's a lot of fun, but it's also been a lot of challenging hard work."

HARD ROCKING BEATSTREET – FRANCO'S ALBUM PROJECTS

Don't think for a second that, just because of all his kiddy TV business, Franco doesn't still get blisters on his fingers. No, the man clearly still bangs the skins on heavy-hitting rock albums, many of which he also produces at Beatstreet while hanging out with his best buds in the business. Two of the most notable and recent Beatstreet-borne albums include *Oculus Infernum* by Van Helsing's Curse and *Axes 2 Axes* by Eddie Ojeda.

Van Helsing's Curse – the latest musical concept from the prolific mind of Dee Snider, lead vocalist and principal agent of legendary '80s band Twisted Sister – is to Halloween what Trans-Siberian Orchestra is to Christmas. It's dramatic, lush, bold, scary, and fun, where Producer Franco gets to flex his sound design muscles in a completely rock/theatrical metal setting.

Ojeda, known to rock fans as guitarist for Twisted Sister, built *Axes 2 Axes* with a collection of respected rock musicians including Ronnie James Dio, Rudy Sarzo, Dee Snider, Joe Lynn Turner, Terry Ilous, and many others. While Ojeda handles the bulk of the album's vocals quite well, standout tracks feature Ojeda's blazing fingers and the vocals of Dio and, most notably, Snider singing on a rocked-out cover of the Beatles classic, *Eleanor Rigby*.

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SOUND INVESTMENT

M8MEDIA AND THE SONIC JIGSAW PIECE

PAUL MAC talks to Jim Allison and Brian Paterson of M8media about the road to a one-stop-shop post production facility.

M8media is a classic one-stop-shop post production house situated around the broadcasting hub of Glasgow, Scotland. Until now though, the one thing missing from its list of offerings has been audio dubbing. To correct that Jim Allison, joint owner and co-founder of the facility, sought the talent and experience necessary to build and operate such a resource, and found it in Dubbing Mixer Brian Paterson. Together with the advice and support of UK pro audio specialists, Media Spec, they succeeded. The ingredients? Pro Tools, Genelec, and talent. On the day before the new audio suite was due to entertain its first client, I spoke to Allison and Paterson about the road to now...

Jim Allison

Paul Mac: Could you give us the brief history of yourself and M8media.

Jim Allison: "I started working for the BBC in the early 80s, and I worked for them for seven or eight years, both down in London, and then latterly up in Scotland. After leaving the BBC, I worked for a couple of facilities houses in Scotland, and then I went freelance and started investing in my own kit in 1994. The company's owned by myself and my wife, and we've grown it from just myself, with one editing system, up to where we are now. We have probably one of the largest facilities in Scotland. The BBC and STV are larger than this, but certainly in terms of privately owned facilities... in terms of the number of edit suites and the capacity that we can cope with.

"We produce roughly between 200-250 hours worth of television every year – programmes such as Location Location... lots of BBC jobs. We did Mountain with Griff Rees Jones, Still Game – a Scottish humour thing. We do lots of stuff for Channel 4 and Channel 5, Sky. You name it we do it. We deal with everything from commercials, corporates, broadcast... and we do all the way up to feature films with investment in the DI stuff that we've got here.

"What's been missing up until now is the one stop shop for sound, which is where Eric and MediaSpec has come into play. He's advised us. We've been very fortunate in getting Brian Paterson who was ex SMG to come on board to do that for us. That one step has made the entire unit much more cohesive. In the past, we've had problems with short notice changes in terms of voiceovers, and that kind of stuff. It's involved lots of bikes couriering things to other sound houses that are sometimes even down in London. This will enable us to react much more quickly.

PM: How far away is the next comparable studio?

JA: There are other facilities in Glasgow that do bits and pieces, but there's nobody that really has the DI clout that we have in terms of the digital cinema projection and the grading system. Even broadcasters and the like don't have anything akin to that.

PM: Is your customer base mostly Scottish? Mostly from the Northern regions..?

JA: Historically, it's been from the Scottish market. Having ▸

said that, we had people in over the weekend doing a pop video who've come up from London, which is a bit of a coup as far as we're concerned... that's a trend we'd like to build on. They have other work as well, so I'm optimistic that word is getting out that we can compete almost head to head with Soho type places.

PM: So you're getting the dub side sorted, but will you be offering the ancillary services like sound design?
JA: Yes. Brian has a huge history as far as doing drama's concerned. He's done *Taggart* and stuff like that, so that is where he wants to take this part of the company. Having the big studio next door is ideal for Foley work and stuff like that aswell.

PM: So you're fully committed to the whole range of sound services?
JA: Yes absolutely. That's right. The company has evolved, and one of the things that we can do is react very quickly – if an opportunity presents itself, we have a chat in the evenings: 'What do you think?', 'Yeh, we'll go for it', and we're off. Which is one of the advantages for not having shareholders and all that kind of stuff to deal with; and that I suppose has allowed us to grow to where we are today.

P*M: And you have the advantage of a nice big flexible space – it's a gorgeous building.*
JA: It *is* a gorgeous building, and we have more space up above; we have another floor like this that we just use for storage at the moment... Potentially we've got five thousand square feet here. We can put on another two thousand square foot just by utilising the space upstairs.

PM: I guess with BBC shifting stuff northwards as well, the future is promising?
JA: Well, several things come into play. One is the BBC moving. BBC Scotland is getting a new lease of life with their new headquarters along the road – they are literally ten minutes walk from here and we have line of sight from the tower here to the top of their roof. They're optimistic that their output will grow both in terms of network and local stuff. SMG, which is the ITV station up here, is only five hundred yards away, and we have a good relationship with them. But in terms of growing more work, yes there's a move to Manchester, but there's also a move to move things outside the M25 as well, so we're seeing a lot more Indies using regional facilities, and we have a good relationship with them all.

PM: Could you summarise the range of services you now offer?
JA: We offer everything. We have our own camera channels, standard definition, and we have the only CineAlta HD camera channel in Scotland here. We have a TV studio, we offer offline services, and not only do we have this place here but we also run and maintain other offline suites in production companies. So although we've got half a dozen offline suites here, over the whole of Glasgow we've got another ten that feed into our online, and we run them for our clients. So that's offline cutting, online both in standard def and high def, and we now offer sound dubbing, voiceover, and so on. We have 5.1, but we won't have a Dolby license or anything like that, but we'll be able to tracklay, take the stems elsewhere. And we can offer grading and a full complement of DI work, both input, output, and finishing. So, hopefully, we've got most bases covered.

PM: You've got a media suite as well.
JA: Our media suite is quite sophisticated, and I think it's unique up here. We have our own streaming website – we've got our own media servers. So, for example, if we're working with a client who's based in London, we can live stream any of the edit suites or VT decks straight onto our website, for client approval of commercials or even full one hour programmes.

PM: Web development?
JA: We maintain about 200 websites for customers as well. Probably the biggest one we have is applianceshop.com, which is quite good. It turns over in the region of £12million a year, and we do that, right down to websites for directors who are our customers – we put their show reels and things like that up. There is a huge degree of overlap... We do a lot of work for local councils – training videos and so on. One of the councils tends to use distance learning so that people can do things at home, and we've been quite heavily involved in developing those kinds of sites.

Brian Paterson

PM: Could you explain your background and how you got to M8 Media.
Brian Paterson: I was with Scottish television – now SMG – for 33 years. I took an early leaving package last November. Since then I've been freelance – general freelance dubbing mixer, working back at SMG quite a few times, and elsewhere.

Jim approached me in June or July with a view to setting up a full Pro Tools dubbing suite, and he asked me if I'd be interested in working with him as a semi-permanent dubbing mixer. At the moment I'm freelance, but if Jim has work coming in I'd hope to be the person who does it... So basically I'm Jim's dubbing mixer!

Jim asked me to design the new audio post production suite and set it up.

PM: Where did you start with that?
BP: I was familiar with the latest generation of Pro Tools mix surfaces – the ICON range – D-Control, D-Comand. The room is probably slightly too small for the larger D-Control, but to be quite honest, I've used the D-Comand a lot at STV and you can do everything on the eight channel system that you can do on the big system.

It's actually got a lot of advantages. It's a smaller footprint, you can get from one end end of the desk to your keyboard without getting out of your seat, and it was the right size of control surface for the room.

PM: The choice of the small control surface is a more pragmatic approach to equipment than, say, big Soho suites sometimes have.
BP: Up here there are one or two very elegant dubbing complexes, and they will attract a certain type of client, but for the sort of work that Jim wants to do – the kind of programmes that come through the edit system here, it's more than adequate for that.

PM: And the whole object of the exercise is to keep things in house...
BP: Historically you would do you offline, then that would get signed off and you'd picture lock. But now even after a program has been picture locked, the client is constantly changing things right up until it goes out. If you don't have the facility in house it just gets so complicated and inefficient. The costs escalate.

The big advantage of mixing in the box – the DAW approach, is that you can work on any project and if someone wants a quick change it takes a few seconds to take one project off and put another one on, and you've got absolute control of every parameter. The concept of the suite was no outboard kit at all. Everything is inside the computer, everything is plug-in driven, so any changes can be made instantly.

The system is fully on line to Avid Unity, but can also do its own lift and layback to Digibeta or any RS422 machine, so you can push and pull from Unity, and also work to a tape that's been edited elsewhere... if it's half an hour long, you can be dubing within half an hour.

PM: And you've chosen Genelec monitoring?
BP: Yes – a full surround system with 8030 active monitors and the 7060A active sub.

PM: Did you specify that?
BP: It was what I'd seen elsewhere, and the dealer that supplied us – Media Spec – suggested them. They're a really good size for the room. Obviously the work we'll be doing just now will be mainly stereo but the room's designed for 5.1. Everything has a 5.1 path, just reduced to stereo for broadcast properties. But if someone wanted 5.1 it's ready to go.

PM: For a modest investment in a sound facility you're actually doing your clients a huge favour.
BP: The one stop shop seems to be the future. In terms of efficiency and cost, it does offer the clients tremedous flexibility... having the same things going on in the same place. If you're doing a grade in the cinema and you're doing a sound mix, and if you've got two competent people, the Director can 'duplex' himself, whereas if you were in separate buildings that would be impossible... and I think they like that idea of not having to sit through a whole dub, because they do tend to nod off through that.

So, maybe from the acorn of a small Dubbing suite in a Glasgow post production house a much bigger concern will grow? M8 Media certainly has the space, and the forward-thinking, client-centered attitude that always seems to produce success. The day after I visited, the first session was due in the new audio suite, and I'm sure many more will come. AM

Audio Media would like to thank Genelec and Media Spec for their help in making this article possible.

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LOST YOU SOMEWHERE

ARCHIVING AND DATA STORAGE

Archiving assets isn't as exciting as creating them. But losing them can cost you dearly, as RICHARD WENTK explains.

It's one of the least expected laws of data storage that as information density increases, robustness and longevity decrease proportionally. A rock isn't easy to write on, and hieroglyphics aren't known for their compactness. But inscriptions from four thousand years ago are still visible today, and there's a good chance they'll still be legible four thousand years from now.

Not so for a typical ProTools project. It's possible to imagine using a laser to burn project files as pits into very large and solid sheets of rock, but economics – not to mention building regulations – make this an unlikely long-term storage solution. Most projects have to use more conventional archiving options. And it's not hard to see that digital archiving isn't as simple as it used to be when recordings were kept on reels of tape stored in a cupboard.

After nearly twenty years of digital sound, it's a surprise to find that there's been very little progress on industry standards for archiving. It's only now that tools are just starting to be developed to make archiving more streamlined, and current archiving solutions are in a pre-beta state. Part of the problem is the volume and complexity of the information that has to be kept. There are also issues created by a lack of standards in the industry itself. Video masters seem to have an easier time of it than audio. As Sharon Hill of Rushes explains 'We keep telecine material for up to a year, stored offsite. We also keep Digibeta archives, or whatever format a client asks for. Clients do revisit old material, but sometimes it just languishes. We don't keep hold of everything for ever, but we do keep the final finished master."

Audio seems to suffer from more obvious kinds of bit rot. Wayne Shevlin is Director of Business Process Development at Abbey Road, which is responsible for managing the EMI Archive, one of the biggest archives of audio material in the UK, second only to the National Sound Archive, and the proliferation of digital formats has made his life very much more interesting than it was in the days of analogue master reels. "Back then the artefacts to be archived were a natural byproduct of the recording process, so the industry didn't need to worry about developing standards or rules. As long as a reel is labelled it's not hard to work out what's on it. That's become much harder now with digital storage. We're finding that some engineers don't name sessions, default folder names aren't changed, track names aren't defined, and some bands like to codename their projects, which means a drive appears here with a codename, and you have no idea what it holds. We had a project recently from a famous band which was handed over for archiving on 70 AIT tapes, all with the word 'Retrospect' on them – which is the name of the backup software used to make the tapes, not the project. What's on those tapes? You can't tell by looking at them, and sometimes you can't tell even after you load the data. Digital also means that artists and producers like to go doolally with the number of tracks they're using, and there are sessions, takes, non-destructive edits in a project, as well as a MIDI, automation, plug-in settings, and softsynths. Unless these sources are rendered to individual track files, they don't exist in the archive. And there may be no way to recreate them later."

So in the digital world, software, hardware, and people, are all working together to make archiving difficult. As Wayne explains: "If something is saved as a Cubase or Nuendo or Logic file, will I still be able to open it ten years from now? Even ProTools isn't guaranteed to be fully backwards compatible. Plug-ins may not be available in the future. People assume that basics like reverb will always be available, which is almost certainly true. But sometimes the plug-in doesn't just alter the sound, it is the sound. And unless that's rendered there won't be any way to reproduce it later."

Physical media have diversified too, often in unhelpful directions. The move to digital recording has created a baffling spread of physical formats, most of which aren't suitable for archiving. And some formats that might have appeared to be archival-quality haven't lived up to the hype. "I can play a metal master from 80 years ago," says Wayne. "It's a very resilient object, and we have the hardware to do it here. There's also research being done to extract audio from vinyl and 78rpm discs using optical scanning to build up a 3D model of the groove, which can then be played and cleaned up. But if you've ▸

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archived to Umatic tape, you're in trouble – there's a good chance that a tape from 1988 won't play at all now. DAT is also a horrible format. It was never really meant for professional use. If you have a large collection of DAT masters, you'll want to do something about that immediately. And now we're seeing all sorts of formats at Abbey Road. I had one project handed in recently on a memory stick."

Memory Map

What about hard disks, which have become a de facto standard of sorts? The convenience factor doesn't mean that disks are free of problems. Archivists don't like hard disks because hard disks are devices, not static objects, and the chances of being able to read a disk ten years from now are small. They're also surprisingly fragile, and enough vibration or an accidental drop will mean that all of the data can disappear – either forever, or at best, at the cost of a very expensive recovery session using a professional disk recovery service. A less important feature that's worth noting is that is that for forensic archiving, it's impossible to access a drive without the risk of changing the data on it because a read operation will change the 'last accessed' date. Creation and modification dates are usually of more interest, but for a few select applications it can be useful to know when the files were last read.

So hard drives aren't the easy solution they can appear to be. Future hardware compatibility can't be assumed; FireWire and USB drives are often used for backups, but there's no guarantee that Firewire is still going to be used ten or twenty years in the future. Bare drives are even more precarious. As IDE has given way to SATA, it's becoming harder to find hardware that can read a bare IDE drive, whether it's naked or in a caddy. Currently this hasn't yet become a problem, but five or ten years from now IDE will be a distant memory.

So what's the answer? Nigel Bennett who is the Post Production Operation Manager for the Pinewood Group is more relaxed about archiving, and relies on clients to define what they want. "We find that clients make a list of deliverables and then we archive to their requirements. Often that means FireWire drives, but the details are up to the client. The items are then put into safe storage. We render all our masters, so there are BWAVE files for every project. We haven't found any issues with backwards compatibility in ProTools – the move from 5 to 6 to 7 has been smooth. But we're strict about using a track labelling standard all the way from premix to master which includes dates, track names, the production details, and other key information. We also have project backup on-site on AIT tapes and a RAID system."

Tape storage is one area where the industry seems to be converging on a solution that's already used in IT with a good track record. Although AIT tapes are used, LTO seems to be winning overall. Wayne Shevlin lists the advantages: "LTO has a roadmap and a future. It's a non-proprietary open standard. Speed and density are set to double every generation, but there's also guaranteed backward compatibility." Simon Jones at Real World Post agrees: "At Soundworks and Real World Post we use LTO 2 drives. Absolutely everything in a project is kept, running from an unattended automated overnight backup system running on an Apple xServe and Retrospect software." The one catch with LTO is relatively slow speeds – overnight backup is essential – but as a format it seems to offer a good mix of reliability, compatibility and robustness.

So what does archiving mean for a typical facility? On the one hand clients rarely want to pay extra, on the other it's bad for business to tell a repeat client that their project has disappeared because they wanted to cut a few corners on budget. Real World's solution is one answer – as Simon says "Most clients don't want to pay for archiving. But we insist. We keep archives onsite, but don't offer any guaranteed future service. Clients can request and pay for their own backup if they wish. If they absolutely won't pay, then we archive anyway."

Future Perfect

But there's a lot more at stake than being able to reload a session ten years from now. The complexities of digital mean that realistically there's a good chance you won't be able to do this. There's no simple equivalent of a tracking tape in the digital world, but rendering a master mix and stems/tracks for archiving will give you a good chance of reproducing the original. Saving a ProTools session doesn't guarantee you'll be able to restore your project, but adding it to your archive of rendered tracks means that you'll have at least some of the files and settings available in the future. Naming every element in a project with a standardised naming system, and including file and project metadata, will give you even more information to work with later.

- **Consolidate and render all stems and tracks to single files as the 'bare metal' version of a project, which has the best chance of being read in the future.**
- **Use open cross-platform file formats like BWAVE.**
- **Define metadata and naming requirements for all projects in your facility. Make sure they're adhered to.**
- **Copy and archive to LTO tape, ideally with at least one extra safety copy kept offsite.**
- **Keep a watch on developments in future asset management technology – automated systems will make your content more valuable in the future.**

But why bother? As assets become more fluid, and repurposing between different formats becomes more common, archiving becomes less about historical 'what if…?' storage and more about instant access to media which may require play-out or remastering in any number of new and old formats. Wayne puts it in context: "At Abbey Road we're working on providing services to artists and record companies and to owners of any digital material – and that means proper asset management. We set our own standards in-house, and that means EMI's projects are easier to archive when processed at Abbey Road because we enforce a high degree of consistency in file naming and data collection. The future is going to mean asset management systems that can take in different formats and transcode them automatically to output formats, whether they're CDs, DVDs, MP3s, samples or ringtones. We're doing some of that already with video, but audio is more complex, because of the organisation and the metadata. The key is metadata management – you put your investment into metadata which makes almost anything possible later. Our Smart Lab project is in the early stages of tying it all together, so we'll be able to offer a comprehensive automated service to clients. Automated access is going to make or break content providers, because when you have thousands of titles to move to a new format, it's too expensive to do it by hand. With a format like LTO and the right asset management system, the process can be robotised."

So looking ahead, it's possible to imagine a time when processing power becomes so cheap that projects can be archived as objects which not only include all of the relevant files, applications, and plug-ins, but all of the hardware needed to make them work. An alternative is grid-based distributed archiving, where information is maintained across the net with multiple redundancy, so no one location can access it without permission but it's nearly impossible to destroy. But the physical layer will be almost invisible – what will make archiving useful will be the ability to pull up any master file and deliver it in almost any format automatically.

So it's likely that archiving will slowly merge with play-on-demand systems, creating a master library of content which can be accessed from anywhere in any form. Facilities, labels, and movie studios which work towards this kind of flexibility will have a head start on those who consider archiving a chore, and are still pasting a print-out of a directory tree onto a bare drive and hoping the project will still be playable a few years from now.

For now, the merging of archives and play-out systems is speculative. It's a digital truism that information doesn't exist unless copies are kept in three different locations. But constraints of expense and practicality make this kind of redundancy unappealingly complex. Until a standard appears for session management, you can protect your own and your clients' work by following the rules in the box. And keep an eye on future developments in asset management – there's a lot more development to come, and it may yet change the way the whole industry works.

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It is this reliability and unique sound, along with their ½ inch aluminium chassis rails that also make them ideal for the road.

Artistes including The Who, The Eagles, Kanye West, Sting, Bruce Springsteen and Kelly Clarkson use Summit on tour.

TLA-100A Tube Leveling Amplifier

DCL-200 Compressor Limiter

EQP-200B Dual-Program Equalizer

Pete Townshend with his TLA100's on The Who's recent world tour.
(Picture courtesy of Pete Townshend)

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Stirling

IZOTOPE RX ADVANCED

AUDIO RESTORATION SOFTWARE

Boston-based developer iZotope targets a broad spread of audio producers with a well-featured tool for massaging mangled programme material. KARL FOSTER tortures it with trashy timbres.

Audio-restoration software abounds, and unsurprisingly so. Even in the digital age of super-clean sonic production, there's healthy demand for devices that can haul ancient audio into sparkling, 21st Century clarity. Remastering music and soundtracks for DVD and surround challenges many a producer, such is the public's taste for revisiting old songs and movies. Add in the profit-motive of media publishers aiming to re-sell back-catalogue material in a shiny new form and we've an ocean of recordings suffering sub-prime production just waiting to be plumbed.

Some may be familiar with the jaw-dropping performance of iZotope's Ozone 3 multiband mastering plug-in. Well, the Boston boys have been busy again with the development of a restoration suite devised to remove ugly audio well before mastering optimisation makes hum, buzz, clicks, and flatulence stand out like sore thumbs. RX Advanced promises a complete solution to the challenges facing the audio engineer, samplist, archivist, and even podcaster – the tools to remove analogue and digital clipping, clicks and crackles from various sources, mains hum and equipment buzz, constant background hiss and, perhaps the star of the show, a means of Spectral Repair, of which more later.

RX faces stiff competition from established software, including Adobe Soundbooth, Sony Noise Reduction 2 as bundled with Sound Forge 9, and the premium-priced Waves range of prophylactic X-series processors, along with Z-Noise. There are others, many priced well below the near $1,200 ticket of RX Advanced, and many of which are available as plug-ins (iZotope suggests a plug-in version of RX Advanced will be available shortly and, judging by the rest of the developer's product range, we can look forward to incarnations compatible with all the main hosts). So what makes the standalone RX worth a crunch of one's credit card?

Looks first, we've an attractive, well-laid-out interface, a major feature of which is the facility to overlay the audio waveform on a spectral display via a slider that crossfades between the two views. Amplitude can be seen in direct relation to frequency spread and intensity, which is neat. And neatness extends to the layout of the top-level tools on tap – five big buttons at bottom-left for the main processing modules, transport controls near centre, plus zoom and selection tools at right. There's plenty of info on display, including the audio file's sample rate and bit depth, along with a continuously updating read-out of where the cursor is at in the timeline, dB at the given point and the frequency over which it's hovering, so you can target anything displayed in the main window precisely. There's also a 'history' window showing the processes applied. If you mess up, it's easy enough to hop back a step or three to undo bungling.

Clip, Click And Hum

Much as audio pros take care not to push audio into clipping, jobs do crop up in which A/D converters have been overdriven, or there's too much signal on tape, or worse. Live recordings are prime culprits, as are old records, spoken interviews, and poorly recorded movie dialogue. When re-recording is impossible, RX Advanced's Declipper module is called for. It features single-band, multi-band and even multi-resolution modes, the latter two of which are OTT for most occasions. Perfectly good results can be had from the single-band option, by which you can compute the threshold of a badly clipped selection and apply the analysis to the whole file. Of course, left to its own devices, the result will be a lot quieter than the original take, but there's a make-up gain slider to offset that. I'm an evil reviewer, so I gave it a spot of speech recorded more than a century ago to a piece of tin foil. The result, while still pretty dreadful, lost its harsh-edged distortion and boosted clarity impressively. On more modern material, such as overcooked cassette-based Portastudio tracks, and red-lined digital recordings, performance is excellent. Anyone engaged in remixing or archiving poorly recorded, heavily clipped material will find Declipper a godsend.

Archivists, and samplists, will also revel in Declicker (excepting those who want vinyl-click to feature as an FX treatment). Automatic mode does a good job of interpolating out obvious clicks and pops, offering control over sensitivity and click-width in milliseconds. ▸

THE REVIEWER

KARL FOSTER is the former editor of *Future Music*, *Digital Music Maker* and *Total Guitar*. He currently provides editorial services to a wide range of print and online publications aimed at creative users of technology.

Spectral Repair enables you to re-synthesise material from around a selected snippet in order to attenuate or replace the selection..

"Mary had a little lamb..." intoned Thomas Edison while larking about with a piece of tin foil wrapped around a cylinder. DeClipper reveals he hadn't quite got analogue overload sussed at the time.

RX Advanced has presets for 50Hz (UK) and 60Hz (US) mains hum, plus the means to deal with hum harmonics, as well as a 'free' mode for notching other frequencies.

Declicking can also be performed manually – Simple and Advanced modes feature, both of which enable you to determine the number of samples surrounding a click that are used to interpolate the resulting... Clicklessness? And here's where another cool tool pops up: Find Similar Events. You could happily spend your client's budget manually removing each pop and click missed by Auto mode. Better to have RX Advanced detect the next similar aberrance and treat it in a trice. This device is especially useful with Spectral Repair, but let's examine noise first.

Dodgy mains can leave a 50Hz drone humming away on the background, or 60Hz on recordings made in the US. Then there are mains-hum harmonics, made worse by grey-import products using transformers designed for use in America, but deployed in the UK. RX Advanced's Hum Removal module enables you to target 50 and 60Hz hum, along with up to eight harmonics, and notch them out. There's also a 'free' facility, should mains frequency have drifted slightly (and it does), as well as for zoning in on constant hum from, say, a guitar amp. Further, Hum Removal has high and low-pass filters for alienating the whale and bat communities, as well as the means to adjust Q and apply linear shaping, rather than curves. You do lose a certain character from full-bodied instruments when hum is notched out, but rather that than bottom-end garbage.

Further up the frequency range, we've hiss. As with most devices of this type, RX Advanced's Denoiser enables you to 'train' the noise-removal algorithm with a section of supposed silence and calculate background noise out of the audio file. And very effective it is too, the Advanced mode featuring tools to reduce the usual 'gurgling' artefacts that arise with audio suffering appalling SNR stats. Three algorithms are available, the first of which can operate in real-time. Algorithm C does a more refined job, but takes a good 90 minutes to do its work on a four-minute stereo file (48kHz, 24-bit), so you might want to save that one for days when work is slow. However, the very latest update to RX does include multi-core CPU support, which, according to iZotope, makes a huge difference to the processing time in 'C' mode. If you're really patient, there's a multi-resolution algorithm that can be applied in order to reduce 'smearing' transients, which can be particularly noticeable in the higher frequencies. Psycho-acoustic suppression and harmonic enhancement further serve to finesse. Applied to ancient (well, 20-year-old) demo material recorded and mixed on magnetic tape, Denoiser is stunningly good. Even in situations where multiple bounce-downs have near drowned the signal in glorp, careful parameter tweaking rids the result of that characteristic 'underwater' sound common to aggressive noise-removal techniques.

Sparkling Spectral Stunts

The final module, Spectral Repair, has four tricks up its sleeve. It's possible to select an aberrant event of much longer duration than possible with Declicker and simply attenuate it so that it matches the amplitude of frequencies surrounding it, masking the corrupted segment in the mix. Second, you can elect to use Replace, which reads information surrounding the selection and interpolates new audio from that data. Then we've Pattern, which looks for the most similar material surrounding the selection for even more seamless replacement. Finally, there's Partials + Noise, which resynthesises the corrupted segment by locating signal harmonics from either side of the selection and linking them together. Remaining non-harmonic material, meanwhile, is simply replaced.

> "That's the science. What matters are the ears and Spectral Repair will send them cock-a-hoop – a bizarre image, but then this module is bizarrely effective."

That's the science. What matters are the ears, and Spectral Repair will send them cock-a-hoop – a bizarre image, but then this module is bizarrely effective. Accidental fret-buzz in a frenetic passage of nylon acoustic guitar is massaged into oblivion; tape drop-out during a take of impassioned vibrato vocals is masked without robot-ising the performance; an emphysemic wind-player's cough, and subsequent clatter as he falls unconscious, is wiped. All very effective and of great benefit to those re-mastering live material, cleaning up on-set movie sound, rescuing severely damaged vinyl recordings, and more.

You've control over the number of frequency bands used for interpolation, a multi-resolution mode for improved low and high-frequency repair, and various other parameters that can be tweaked for seemingly magical glitch removal. As mentioned, Find Similar Event is a real timesaver with this tool.

With modules covered, we've still additional facilities for altering gain, applying four-band EQ of either analogue or linear-phase types (it could be considered six-band if you account for the low and high-pass filters), a flexible Resample function that's very effective at combating aliasing artifacts, and a proprietary dithering technology (MBIT+) for manipulating bit depth.

The Verdict

RX is available in a 'lite' version at $349, so what makes Advanced worth more than three times as much? It's got to be the sheer level of control it offers and the effectiveness of its dithering and resampling technology. Multi-resolution declipping and spectral repair are exclusive to the Advanced version, as is an advanced manual mode in the Declicker module, and the use of iZotope 64-bit SRC sample rate conversion for resampling.

Undo History, Compare Settings, and Batch Processing functions add much to what is, on the surface, an easy-to-use, good-looking app, but which has hidden depths. When time is pressing, RX quickly makes good of compromised material. And when you've time to kill, there's so much to explore in the pursuit of pristine sound. Navigating a file and tracking down undesirables is child's play, while the more advanced functions are as educative as they are effective.

Of course, for those recording with the latest digital kit, working well within the technology's tolerances, keeping a close eye on the meters, the cleanliness of signal paths and with the luxury of time to re-take, much of iZotope's latest offering will mean little. But for the many working with substandard material, RX Advanced provides a comprehensive, flexible and powerful means of addressing the shortcomings of poorly recorded audio. The range of tools toted by this package, and their effectiveness, makes it well worth the spend. It'll be interesting to see how the promised plug-ins fare on launch.

INFORMATION

£ iZotope RX Advanced: $1,199 MRSP (download)
iZotope RX (basic): $349 MRSP (download)
Ⓐ One Kendall Sq, Bldg 200, Cambridge, MA 02139, USA
ⓦ www.izotope.com

SIMON GOGERLY

THE MUSIC (MIXING) MAN

A decade-long dream has finally become reality for Grammy award-winning mix engineer Simon Gogerly, escaping London's hubbub for the (working) good life in rural Essex, where technology, talent, energy, and investment have conspired to create a personalised mix studio par excellence. JONATHAN MILLER leaves his wellies at the (soundproof) door.

As one of the UK's leading mix engineers, Simon Gogerly needs little in the way of introduction. Fans of Irish rockers U2's last bucket load-selling long-player, *How To Dismantle An Atomic Bomb*, might well have heard of the man with the golden mixing touch, whose talents graced its February 2005 UK number one *Sometimes You Can't Make It On Your Own* – vocalist Bono's moving lyrical tribute to his father, Bob Hewson, who died in 2001. That single won its two nominations (Best Rock Performance by a Duo or Group with Vocal, and Song of the Year) at the 48th Grammy Awards held at the Staples Center in Los Angeles, California on February 8, 2006. *City Of Blinding Lights*, the fourth single to be lifted from the album, reaching number two in the UK in June 2005, also scored a Grammy ('Best Rock Song') at the same ceremony. Certainly someone, somewhere, noteworthy within the National Academy of Recording Arts & Sciences was all ears as Gogerly himself was duly rewarded with a Grammy for his sterling work on the aforesaid album that bagged 2006's 'Album of the Year – 2005'. According to his supportive wife, a self-effacing Gogerly had to be cajoled into boarding an LA-bound flight for the red carpet treatment.

Here's an individual at the top of his game, yet the success is not without its attendant downside, as is so often the case. "When I was mixing, usually I was having to go into London – often in the mornings, so it could be anything up to a two-hour drive, just to go 40 miles or so," says Gogerly. "Then, because you're working in a studio in London that costs 'X' amount per day, I'd have to do a mix in one day – often involving editing, so I could easily be there until the middle of the night, and then there's another hour's drive home."

Add a family into an already demanding mix, and daily life could commonly turn out to be very draining indeed. One could credibly argue that the solution for someone in Gogerly's privileged position is obvious: build a studio closer to home – or even in his home. One is easier said than done, the other option not necessarily ideal. Initially, Gogerly opted for the latter, albeit a halfway house of sorts – Hub, about which his website still states: "Hub is Simon's own studio, which he uses primarily for pre-production work and mix preparation. If time allows, he likes to get hold of the files for a mix project in advance and spend some time familiarising himself with the track, doing any preparation work that may be necessary, such as cleaning up edits and organising tracks. This approach means that the mixing process can progress smoothly once he takes a track to its final stage at a full mix studio."

Today, the proud owner of Hub II looks back on its predecessor through decidedly non-rose-tinted glasses: "I had a little studio set up at home, which I did mix in when it was smaller projects with lower budgets. I could do finished mixes in there, but it was very hard work, because you were struggling with the limitations of the equipment, really."

To The Manor Barn

On the other hand, Hub II is Gogerly's newly-opened full mix studio, sited conveniently a stone's throw from High Barn's multi-tasking live venue, recording studio, and video production operations (profiled in *Audio Media* May 2007). High Barn's recently-instigated High Barn Records offshoot pooled resources with Hub II to jointly celebrate their respective launches on December 6, 2007.

> "Working through from nine o'clock until six or seven in the evening, is much more conducive for a happy life than having to go to London for 14 hours and spending three hours on the road."

"On a practical level, the main reason for setting up this place was that it was going to be close by," Gogerly reasons. "I can work the hours that I want to work, instead of 'standard' studio hours... I have kids, and I'm up at seven o'clock in the morning, so coming in here, after having taken the kids to school, and working through from nine o'clock until six or seven in the evening, is much more conducive for a happy life than having to go to London for 14 hours and spending three hours on the road.

"The other thing is just to have a room that I can tailor to the way that I want it to be, and have the equipment ▸

Photography by Mike Banks at www.recordproduction.com

Simon Gogerly at work.

that I want to use – not being stuck with something that a particular studio might have... Then you go to another studio, and it's different stuff."

On the face of it, a converted rural business park rental unit might not sound like an ideal setting for a highly-capable mix studio. As highlighted in the tasteful accompanying photography by RecordProduction.com's Mike Banks, Hub II is unquestionably smaller than those established London-based facilities favourably frequented by Gogerly on a reasonably regular basis – AIR Studios, Mark Angelo Studios, and Strongroom, et al, yet its justifiably proud owner should be congratulated on making such good use of its footprint... with a little help from some fellow audio industry professionals.

First, though, Gogerly had to settle on The Bardfield Centre itself: "It wasn't perfect; the perfect thing would have been to have found a completely separate building – probably with some sort of acoustic qualities to it, but I could have been searching for years and could have ended up spending a fortune on rent – property prices round here are just as crazy as in London! Originally, I was looking all around the area. I found a barn that I thought about possibly converting for about two minutes until I found out how much it was going to cost – a hundred-grand or something, then all the conversion costs on top put it completely out of reach, so this is a good alternative because it was just a very simple, empty space, so I could do what I wanted. It could have been a bit bigger, but then the rent's not too expensive, so I could put a bit more into equipment and acoustic treatment."

Architecture And Morality

Enter consultant acoustician Nick Whitaker (ex-Recording Architecture co-founder). "He came up and umm'd and aah'd a little bit about the size of the space," states Gogerly. "It was all open, but we found that – partially due to cost effectiveness, but also from a practical level – it was best to only have to put in two new walls, as opposed to splitting it up and building new walls along the sides, and stuff like that. The only walls we put in are the ones separating the control room from the vocal booth, and the vocal booth from the kitchen, which is at an angle, so that the vocal booth is not a regular shape. We got away with making the control room less regular by putting in angled corner sections. The only thing we had to do that was quite labour intensive was take the ceiling down, then put in a new suspended one."

The reason? "If it's just a regular ceiling then it'll vibrate and make the roof space above it into a kind of big sound box, amplifying the sound to the outside, plus you'll get resonance coming through from up there as well."

The previously alluded architectural limitations of the building housing Hub II together with its tenant's level-headed budgetary constraints prevented Gogerly going as far as commissioning a full floating 'room within a room' design: "The floor is just concrete with wood veneer on top, so that's fairly dead, because it's not floorboards over an empty space. We've done a lot of treatment, so it does sound fairly dead, but, with a mix room, you do want a little bit of reflection off a few surfaces here and there, just so that it's got a little bit of life to it, and doesn't sound completely clinical; but you want it to be dead enough so that you're not getting bass frequencies bouncing around in corners, so the heaviest treatment we did was in the corners, and on the ceiling, where there are suspended panels."

Gogerly's Grammy.

All of those were custom-designed specifically for Hub II's tastefully-finished control room, of course: "Nick designed all the panels and the method for attaching them, then we got Acoustic GRG to make them up. We also bought a couple of Modex Broadband panels off the shelf."

Those North American (RPG Diffusor Systems)-designed off-the-shelf Modex Broadband panels – of which Kent-based Acoustic GRG Products also happens to be Europe's only authorised manufacturer – are suspended between the Hub II control room's two left-hand-sided daylight-welcoming windows – in front of which is positioned Gogerly's Apple PowerMac G5-driven Logic rig, including "...a little Mackie [SR24-4] mixer, a MOTU [828] interface, and [Akai S1000] samplers, and so on," all of which date back to the original Hub (home) studio – and in its adjacent vocal booth. According to its creator, the Broadband solves low-frequency modal problems while taming mid- to high-frequency reflections by offering significant absorption between 50Hz and 5kHz. "They're four inches thick, made of heavily absorbent foam stuff encased in a kind of metal case with lots of holes to soak up the frequencies," Gogerly explains, evidently satisfied with the results.

Three-Letter Drive

When the time came to fill that new mix room with some choice new kit, Gogerly's mind was pretty much made up from the outset when it came to choosing the main tool of his trade: "I trained on an SSL when I first started – for the vast majority of the time I've mixed on SSLs, so it wasn't really too much of a hard choice. The SSL AWS 900+ was a contender – at the upper end of what I could afford; SSLs are obviously a classic mixing desk – consequently, they have that kind of price tag, so I was thinking, 'Shall I go the other route of just getting a good-sounding summing type of mixer and do most of the work in Pro Tools?' But I wanted to be able to do some old-fashioned mixing – plugging in outboard compressors and things, so really the SSL was the only desk that gave me the opportunity to do both things, because you can automate from both sides. Directly from the desk you can automate the analogue faders, and also you can do some of your Pro Tools automation from it, although for some functions it's still easier and quicker to just draw a line with a mouse, but it's good to have the choice."

Not-so-close contenders included Rupert Neve's new 5088 analogue Mixer - "...if you start stacking it up with EQ modules then, before long, it would be more expensive than an SSL [AWS 900+]..." – and various Paul Wolff-designed modular console configurations from Tonelux - "...you can control the desk automation from within Pro Tools – something that the SSL doesn't do, so I was tempted, but restricted to a degree by the size."

So Solid State Logic came up trumps on a number of counts, comfortably accommodating Hub II's tight two-month build schedule while not ignoring the weight that those three little letters alone are often perceived to carry. "As soon as you say you have an SSL studio then people take it an awful lot more seriously than if you said you had something else," declares Gogerly, before putting that apparently sweeping statement into its rightful context: "In some ways it's ridiculous, because once you get up to a certain level of quality – things like the Neve and Tonelux – then they're all going to sound really good, albeit with different qualities and ways of working."

Compress To Impress

One potential AWS 900+ Analogue Workstation System stumbling block had to be overcome

before taking the purchasing plunge, however: "For me, compressors are one of the major mixing tools, and one thing that I've always loved about SSL desks are the good-sounding compressors on all the channels, but because the AWS has only got two compressors you haven't got any more after you've assigned them to specific channels, so one of the things they persuaded me to get with the desk was one of their [XLogic] X-Racks loaded up with compressors, so I've now got 10 compressors, which is probably going to be okay."

Gogerly's also got a couple more rack-mounted beauties up his mixing sleeve: "There's a technician at Mark Angelo Studios, who also works for Mutronics, and he's been making me some stereo compressors, which are fantastic."

Then there's always his trusty Digidesign Pro Tools rig (running on an Apple Mac Pro) by way of compression back-up: "It's loaded up with plenty of good plug-in compressors, but there's no real substitute for the real thing."

Gogerly prefers 'real world' outboard.

More notable rack-mounting additions to the Hub II outboard processing arsenal include the long-time-coming Bricasti Design M7 Stereo Reverb Processor, sourced from Stirling Trading, which is proving to be a big hit with Gogerly: "I think it's the best-sounding reverb that I've heard – as good, if not better than 480Ls, PCMs – all those Lexicons, and the TC [Electronic] System 6000. It wouldn't necessarily be so good for some of the more dense, dark reverbs that you might get out of some of the cheaper boxes, but for really realistic-sounding reverbs it sounds amazing. As a matter of fact, it's a shame that I couldn't afford to have three or four of them, because I can see that I would want to be using more than one sound from it in a mix, but because it's really quiet as well – whereas some of the Lexicons always had a bit of a problem with being a bit noisy – you could feasibly just record the sound that you want into Pro Tools, then set it up for something else in the mix; I fully intend to do that."

Other outboard old(er) faithfuls that journeyed from the original Hub to Hub II for an occasional look-in include a Joemeek VC1 Studio Channel, SPL Classic Vitalizer, Focusrite ISA 430 MKII, two TC Electronic M300 Dual Engine Processors, Yamaha SPX50D, and Roland SDD320 Dimension D.

Do You Hear What I Hear?

Which brings us neatly to the final stage of the critical listening chain. "Monitoring was a big thing, though I'd already been through that process maybe a year-and-a-half ago when I was looking for some midfield speakers that I could take around with me," Gogerly reveals. "I tried out loads – pretty much everything with plenty of active power so that I wouldn't have to carry an amp around. In the end, I found the Focal [Twin6 Be], which, to me, just sounded the most natural – like I would have expected speakers of their size to sound. I've added a sub – just specifically for here, and when Nick came to tweak the room he helped set it up so that it's at a good compatible level, and had some special [Something Solid XF] stands made by a company called Noteworthy; the concept with these is that they're just a frame made from very heavyweight, solid-steel poles but the bulk of the space within the speaker stands, as it were, is just empty space, and because the tubes have such a small cross section and are very rigidly welded they don't really resonate. The speaker just sits on four tiny bits of graphite, I think, with a bit of Blu Tack on top. Basically, it's almost like having them suspended, so they sound really good."

When it comes to mixing, it helps to have some not-so-good-sounding speakers as well. "I just got some regular stands for the [Yamaha] NS10s; they're slightly obscured by the computer screens, but I thought, 'Well, you don't really listen to NS10s for the sound quality – more just to check that your mix has got some punch to it and the tight level of top'."

A solitary vintage Auratone 5C sits atop Gogerly's AWS 900+ also for checking purposes: "I listen in mono – usually quite near the end of the mix, just when I'm fine tuning the balance to make sure that I can hear all of the vocals, and that sort of thing; also sticking something into mono means that you're making sure it's going to sound okay on a radio or old-style TV, though these days most people have got their TVs plugged into surround systems, so goodness knows what your stuff's

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Taking advantage of modern technologies together with hand - crafted and tested approach, JZ Microphones proudly introduces the new multi - pattern studio microphone The Black Hole.

JZ Microphones was established in September 2007 in Latvia, country with strong traditions and great experience in manufacturing of microphones. Both visual and technical design of JZ microphones is and will be done by worldwide well recognized designer – Mr. Juris Zarins.

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going to sound like coming out of those, because they're in all kinds of rooms!"

But that's not all: "I've got these other monitors – NHT M-oos, which are just small powered speakers, but they've got a surprisingly big sound – the right kind of character to give you an impression of what something would sound like on computer speakers and modern hi-fis, really. I'm using the NHTs for monitoring the Logic rig, but also I've got it set up so I can play the mix through them, which gives you an extra option if you're not quite sure if you've got the right kind of top end balance, for example. They're very good for that, though, having said that, the Focals have got great top end, because they use these Beryllium tweeters that go up to 40kHz – not that you can hear that, but it does make a difference, because all those harmonics that are up there kind of interact with lower frequencies, so you can hear the effect."

Simon Says

So why the need for Hub II's dual-rig set-up? Let us return to Gogerly's website: "Simon says, 'Pro Tools is great for mixing. It's the ultimate multi-track tape machine! The audio editing is superb, the sync options are great, and it's pretty solid; I need to know that I can rely on it during a mix. Logic's a different kind of animal – the perfect tool for production. The MIDI editing is comprehensive, it's intuitive; you can configure it your own way, and it's packed with highly usable instruments and plugs. I'd say that Pro Tools is for engineers and Logic's for producers; I do both, so I use both!'"

So there you have it. Hub II might not be in a barn, but its proximity to a very nice one could come in handy: "I specifically came up here, thinking, 'If I can find something near to High Barn then that could be quite advantageous, because the one thing I'm not going to have room to do is any large-scale recording.' 95% of the time I'm mixing, but there's always going to be those occasions where you might need to record drums or some strings, or whatever. I've built a small booth here for doing vocals and guitars, but for anything bigger, I thought, 'Well, I can go over there, take some work in for them, and the upshot of it is that they've got their bands and label, so I may be able to do a bit of mixing for them.'"

For Gogerly, the key to a mix is "...knowing what you're listening to, and if you're in a space that you know really well then it's one thing that's constant – the most important thing, really, because what you're hearing is going to colour how you mix something, irrespective of equipment."

It's About Time

Equipment (and practicalities) apart, Hub II also affords Gogerly an opportunity to explore other mixing opportunities close to his heart (and home); here's a thoughtful individual dedicated to performing a delicate balancing act of mixing with his ears and thinking with his head. "As well as doing my regular mix work and keeping the place running, the rest of the time – if there is any – can be spent using this place to do development work for some of those projects that I've come across or bands that I've met – to try and bring some of those people's careers along by just getting involved at the grassroots level."

Demand though will surely dictate that London still comes calling for Gogerly's proven skills on those luxurious bigger boards? "I'll still be going and working in some of the bigger studios in London, because not everybody that I work with is going to want to come and camp out in Essex for a couple of weeks while we mix their album."

The future is far from set in stone, however, and could well end up being a less luxurious place for high-profile artists and mixers alike. With Hub II, Gogerly can comfortably accommodate a changing clientele; donning his thinking cap, he concludes, "I think the music business is changing quite a lot; with the whole download situation and CD sales coming down, there's going to be quite a lot of changes in the way that it's run. I think there's going to be a lot more Internet-only releases – people releasing things on a more staggered basis; consequently, I think there's going to be a lot more situations where you're going to be working on stuff one song at a time, rather than mixing whole albums. I think having a more stripped-down studio that I can run in my own way is going to help with those kinds of projects where there are smaller budgets, because I can take something like that on for a fixed amount, then I can spend as long as I need without worrying, 'I've got to mix this in one day at that particular studio.' I can do it here over the course of however long is necessary."

And that's got to be a good thing for all concerned.

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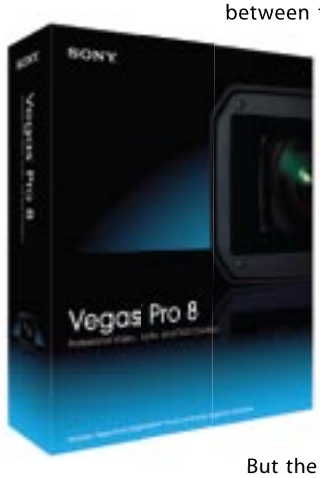
SONY VEGAS 8

VIDEO EDITING SOFTWARE

Sony's Vegas 8 comes with a new 'Pro' label and an interesting collection of features. RICHARD WENTK tries it out.



As video moves away from traditional broadcast into delivery on the Web, on mobiles, and even on games consoles, traditional video assembly becomes less linear and more open-ended. Last decade's workflow – capture, edit, print to tape, author to DVD – is fragmenting into a wider range of practices that cover everything from colour grading at movie resolutions to Web video for mobiles. Content is often shared between formats, and application suites are being expected to handle some or all of the new requirements, when previously all they were expected to do is splice together video and perhaps add some titles. Manufacturers are responding in very different ways. Apple's most recent Final Cut Studio update has concentrated on the high end, with HD and movie-quality editing matched up with iPod video output, while Adobe's Creative Suite update has concentrated more on Web and Flash integration.

At first glance, Sony's Vegas update doesn't seem to have done much of either. An overview of the new features suggests they're intended to make editing more comfortable and to improve render quality. But the Web is largely ignored. So this is still very much Vegas-for-video, and possibly Vegas-for-movies for a minority of more adventurous users.

Top of the list of quality enhancements is 32-bit colour support. This is processor-intensive, but avoids the noise and other artefacts introduced by 8-bit editing and can give video more of a smooth movie-like feel. It's particularly useful for compositing – although the colour keying and other compositing options haven't been updated at all, and are now looking a little basic compared to what's available elsewhere. A related feature is 10-bit video encoding from AJA SDI video cards – possibly a legacy choice, given that most capture is now from digital sources.

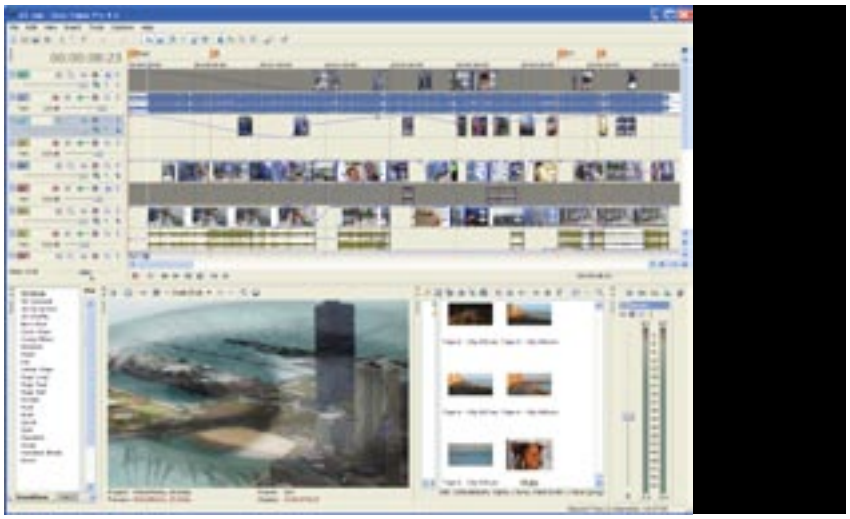
Multi-camera support is the other most significant update. This is cleverly implemented. Synch is most easily achieved with timecode or by manual adjustment – a clapperboard remains a useful accessory – and once the clips are arranged in parallel on the timeline switching to Multi-camera Mode creates a multi-camera track and shows simultaneous previews. You can then cut or fade between them during preview using the number keys – or, with a little more effort, an external controller. The frame rate is limited by disk and processor speed, so don't expect to be able to edit eight simultaneous tracks of HD with full-speed preview. But the Vegas preview system can work with smaller preview Windows to make even HD edits reasonably smooth. Because Vegas doesn't care what's on each track, you can also use this mode for live hands-on editing of unrelated material. It would be useful to select which tracks you want to include in Multi-camera Mode – often you'll have sections on the timeline that are loaded but may not be in use, and Multi-camera Mode isn't smart enough to be able to allow for this. But overall it's a powerful new editing feature with plenty of applications.

Generating For The Better

Also new is an improved title generator. This is a little less successful, not because it doesn't work well, but because it's relatively limited. While the YouTube generation

THE REVIEWER

RICHARD WENTK is the owner of Skydancer Media, a digital production company providing sound, image, design and consultancy services to various clients in London and the West Country.



Vegas is still one of the best editors for complex multi-lane editing, with on-screen opacity and keyframing.

is happy with some Helvetica on a blue background, broadcast titling has become an art form in its own right, and glows, ripples, reflections, and animated effects are standard requirements. The new ProType titler falls between those extremes. You can animate type to some extent, but it's not much of an extent; the range of effects is limited to glows, blurs, and drop shadows, with an optional gradient fill for the type. There's also a basic range of geometric transformations, including stretches, rotations, and sheers. Type can also follow a splined path. All of these effects can be keyframed for animation, so it's possible to scroll your title along a path while also blurring it and adding a variable glow. Finally there are Flash-like effects – bounces, drops and letter zooms. Taken together the titler is clever enough to give amateur video a bit of a professional gloss, and will also be useful for in-house corporate productions. But it's still some way short of what's required for broadcast. There are no lower thirds or more advanced animations, and the supplied presets are very limited. More eye candy and more demonstrations of what's possible would have been helpful here.

Featuring The Exotic

A slightly exotic new feature is what Sony is calling Digital Signage. This really just means being able to create rotated or inverted video. Putting the camera on its side to create a portrait view has been a standard technique for a while now. It's always been possible in Vegas to rotate footage, so this feature is really meant for video output – apparently it's useful for kiosks.

On the audio side, not much has changed. The mixer interface has been improved, with more flexible support for plug-ins and routings. Tempo information is also now sent to plug-ins. Vegas has always been surprisingly flexible as an audio editor, and it's a useful secret weapon for audio to picture. It still doesn't support Acid-style MIDI editing or loop assembly, but it's underestimated as a sound design tool for simple layer-and-edit projects, with a leaner and simpler workflow than competing products. So these changes are relatively minor, but still welcome. FLAC support has also been added. FLAC is becoming a popular lossless compressed audio format. It hasn't taken the professional world by storm yet, perhaps because it's mostly used for file-sharing of pirated CDs and occasionally for home audio and video servers. But it has its uses for FTP transfer of audio between project collaborators, so it's a useful addition.

Format support has seen some more significant additions. The most obvious is support for Blu-ray burning straight from the timeline. You can edit your video and burn a preview straight to disk, without using an external DVD authoring tool. This will give Vegas an instant popularity boost with many studios, as some of the competition is still struggling with Blu-ray. A welcome new format addition is MJPEG support – a format often found in the video recording section of stills camera, and in some of the more obscure areas of the Internet. This feature is around five years late – it would have been much more useful during MJPEG's heyday – but at least it's here. PSP support has also been added, so you can export video to one of the PlayStation Portable formats – another Sony-specific extra. Similarly, Sony has concentrated on its own XDCAM and AVC formats for rendered output. It's also possible to import video directly from the newer DVD burning recorders.

Compared to Vegas, DVD Architect has had very little done to it, although to be fair Sony is calling this is a point-five stepping upgrade rather than a completely new version. Version 4.5 now supports Vista, and FLAC files, and a few new themes have been added – they'll be of interest to anyone who videos weddings for a living. Otherwise it's almost indistinguishable from version 4. Some of the clunkier elements of the interface, which has never been a textbook example of point and

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click simplicity, remain unchanged. For example while everyone else has been moving towards simpler DVD creation, DVD Architect's scripting system still relies on register machine code.

Welcome Updates

Overall there's a feeling that Sony may not be trying very hard with updates, and not pushing the product in a more professional direction. Most of the new features are technology updates rather than feature updates. They're certainly welcome, but not quite as adventurous as they could be. Blu-ray burning from the timeline will be very popular – the lack of support for HD-DVD suggests the direction in which the industry is heading in general – and multi-camera editing will also win some new friends. Compressed audio FLAC support is interesting, but not really revolutionary. AVC and XDCAM support is somewhat Sony-specific, and there seems to be an unwelcome suggestion that manufacturers are edging towards giving their own hardware priority when it comes to capture and codec support – not so much Sony's problem, as the industry's. But in the meantime there's no support for any of the pro-level DVCAM formats.

Other areas remain under-worked. Vista support has been improved. The help system hasn't been rewritten to work in Vista, but some new introductory interactive tutorials offer a consolation prize. The interface has been changed to make it more flexible. You can move the timeline to either the top or the bottom of the edit window – the selection is buried in the preferences – and you can also detach the tabs and options and park them where you want. Full-screen preview on a spare monitor is now much more straightforward, although if you want full-resolution HD preview you'll need the hardware to match. This is all good stuff, but unlikely to inspire fanatical devotion considering what hasn't been changed. The Vegas effects suite was last updated four versions ago, and hasn't been modified since. While other manufacturers are adding support for lower thirds and particle-based blinkies and glossies, Vegas seems stuck in the last century. Advanced effects have become staples of TV production, but if you want them you'll have to export your files to a different package. Also, HD support remains rather literal. Apple's laptop-friendly compressed HD codec has won it a lot of friends. Sony don't have anything similar to offer, and this ties HD production firmly to the desktop.

DVD Architect, meanwhile, is becoming overshadowed by the competition. AC3 and surround support, which used to be its unique selling point, is now a standard feature and development has stalled to the point where it's hard to recommend DVD Architect to newcomers. Unlike Adobe, which has put a lot of time into updating the latest versions of Premiere, Encore, and AfterEffects to work with Flash, and to offer Flash as an output format, DVD Architect acknowledges Flash as little as it can. It can only load Flash 5 or earlier files – more recent versions aren't supported. This may change in a later update, but it's an unexpected omission given today's requirements.

If there's an up side, it's that the downloadable version of Vegas from the Sony website is very affordable indeed now. While Sony has been trying hard to pitch Vegas as a realistic option for post, its pricing, combined with a lack of update momentum and an ominous 'Pro' tag are making it look more and more like a budget product – a very powerful and productive budget product, but one that's lagging behind the more fully featured updates offered by the competition. Ironically, Vegas remains one of the fastest editors to work in, and that on its own makes it worth considering. Basic editing, especially of the busy sort that's a standard feature of a brief today, is still simpler and faster than in competing products. But it would be good to see more enthusiasm for other environments, a more comprehensive selection of effects, and a makeover for DVD Architect to bring it in line with the rest of the industry.

INFORMATION

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ⓦ www.sonycreativesoftware.com

Ⓐ SCV London, 40 Chigwell Lane, Oakwood Hill Industrial Estate, Loughton, Essex, IG10 3NY
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TL Audio
PASSIONATE ABOUT TUBES

TL AUDIO. PASSIONATE ABOUT TUBES

By Peter Charles
UK Correspondent

Nearly 20 years have passed since the first TL Audio unit was manufactured. Maintaining a strict design ethos and dedicated team, the company has established itself as the leader for high quality, yet affordable tube products for the professional and home user. Tony Larking, founder of the company has many years experience in the world of audio.

He was inspired at the time to begin selling refurbished Neve EQ channels because of the rising demand for good quality, analogue front end. Then he met a former design & project leader for Neve and exchanged ideas on a revolutionary new product range. What they managed to produce was a tube product for the modern day - great sounding, musical, clean, quiet and most importantly – affordable. The first EQ-1's to roll off the shelf in 1993 went straight to top producers Roy Thomas Baker (Queen, Foreigner) and Chris Porter (George Michael, Take That).

This was to be the start of many more affiliations with top name artists, engineers, producers and studios. In 1999, TL Audio launched its first large format console, the VTC. This console remains the only serious tube recording console in production today; the first unit sold went straight to Damon Albarn of Blur, who went on to record 2 platinum selling Gorrilaz albums with it. TL Audio products are also used by Coldplay, Dizzee Rascal, Sting (Kipper), and Jimmy Page to name but a few. All TL Audio products are designed and manufactured in England. Care is put into each and every product to ensure that the quality and reliability of TL Audio products is second to none. The factory staff hand assembles all the components, paying great attention to detail and all units are vigorously and individually tested so that we can maintain our fantastic record of quality control. TL Audio has grown into an internationally known company with a vast number of products for the studio and live market. With 2 ranges of outboard processors and 3 consoles ranging from 8 to 56 channel formats, TL Audio is a serious company with serious products. This Autumn TL Audio will launch a new highly anticipated range of products offering Discrete Class A audio that sounds magical. This will continue our journey to deliver the cream of audio technology at an attractive and affordable price.

Each unit is individually tested by a qualified technician.

Coldplay Keep It Warm

Interview with Guy Berryman

Respected world-wide for their honest lyrics, driving melodies and awe inspiring anthems, Coldplay will soon be releasing their forth album. We caught up with bassist Guy Berryman at Coldplay's private office and studio in North London – a place where the TL Audio VTC takes pride of place in the band's studio.

Firstly, congratulations to you for your continued success and ability to create such moving music.

TLA You guys have had an amazing career so far, but what would you say has been the defining moment for you on a personal level?

GB "I think it was the first time we headlined Glastonbury, I mean festivals are always great but that's kind of like the king of festivals. There's just so many people there and its just very special thing to do. I was kinda beside myself with excitement!"

TLA How do you think Coldplay have managed to form their own unique sound within their music?

GB "Well you know I think that stems from us being four individuals and everyone being an important member of the band and able to express ideas. I think when you get that combination of ideas and people ... like if you look at bands like 'The

Continued at www.tlaudio.co.uk

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Many believed that the cost savings, convenience, and quality of the current crop of plug-ins could herald the death of the hardware rack unit. However it seems as though there's still life left in the old 1U high yet. Not only is there a continuous release of new and innovate products, but the trend of re-packaging classic hardware seems to show no signs of abating. Obviously the attractions of hands-on operation, predictable results, reliability, and longevity, combined with the lack of latency and the need for constant updates, is still an attractive proposition.

Benchmark's DAC1 PRE is a reference-quality stereo pre-amplifier, headphone amplifier, and computer audio playback device with 24-bit, 192kHz DAC1 digital-to-analogue conversion. The culmination of years of high-precision analogue and digital audio circuit design, the preamplifier has six stereo inputs, four stereo analogue outputs, a USB computer input, an optical input, and three coaxial digital inputs. The output section includes stereo XLR balanced, RCA unbalanced, and two headphone jacks driven by Benchmark's HPA2™ 0ohm headphone amplifier.

www.benchmarkmedia.com

The **Bricasti Design** M7 is a 24-bit/192kHz Stereo Reverb Processor which utilises the latest Analogue Devices dual core DSP processors to produce stunning algorithms. It features a fully differential analogue section and a transformer-based linear power supply housed in a non-corrosive stainless steel chassis. Produced by a team of former Lexicon employees, headed by Brian Zolner, the M7 features both analogue and digital inputs and outputs.

www.bricasti.com

Buzz Audio's Potion is a FET-based compressor designed to fit into API's 500 VPR Series rack frames. It's a true class A design with an attack-depth dependent automatic release which helps to avoid pumping. The unit is capable of a very fast attack time which the company says approaches the performance of look-ahead digital limiters, and the compressor is designed to add tonal colour to any audio passing through it.

www.buzzaudio.com

Chandler's TG-1 is a recreation of the classic EMI TG12413 limiter. Used in many custom consoles at EMI from the late 1960s, the original limiter was never released commercially, but was much loved by many EMI engineers, including Geoff Emerick. Chandler's version is authentically reproduced from original design information and circuit board drawings obtained from Abbey Road and EMI.

www.chandlerlimited.com

Drawmer's A2D2 is not, as the name implies, likely to give you assistance in your X-Wing while you take on Darth Vader, but is instead a stereo analogue to digital converter which allows you to have dual simultaneous stereo outputs at different selectable sample rates from 44.1kHz to 192kHz. The low jitter clock generator and three word clock outputs make it ideal as a master clock generator.

www.drawmer.com

Elysia's latest product is the eye-catching Mpressor, a dual-channel creative dynamics processing tool offering, according to the German company, several "...specialised functions..." to create " ...fat and freaky sounds." Aside from the usual suspects (Thresh, Attack, Release, Ratio, EQ Gain, and so on), both linkable channels offer a switchable Auto-Fast function for rapid, distortion and artefact-free compression.

www.elysia.com

Eventide's H7600 harmoniser builds on the company's reputation for high quality with this multi effects unit featuring reverbs, modulation, and their word-famous harmoniser algorithms. A unique MIDI virtual rack feature allows for multiple preset changes with a single MIDI control message.

www.eventide.com

Focusrite's Liquid4Pre is a four channel version of their acclaimed Liquid Channel modelling preamplifier. It can be controlled via the supplied 4Control software using the ethernet interface, and a plug-in is also available which can be used within Pro Tools as a remote control for the preamplifier. There are 99 preset memories, and the optional Ethersound make it a useful tool in live installations.

www.focusrite.com

The ISA828 preamplifier from **Focusrite** has eight original ISA-based channels with Lundhal transformers, eight line and four instrument inputs, and an optional 8-channel 192kHz A/D converter. There's also a 25-pin i/o D connector for easy connection with other recording equipment, including Pro Tools HD; and the LED meters use the same reference points as the Digidesign product for easy interfacing.

www.focusrite.com

Grace Product's M201 is a microphone preamplifier that features an integrated 24-bit/192kHz ultra low latency A/D converter module. Either the microphone preamplifier or the M-S matrix decoder can be routed to the A/D converter input, and external processing can be inserted between the mic preamplifier and the digital converter.

www.gracedesign.com

The **Lexicon Pro** PCM96 brings the company's renowned reverb and effects algorithms directly into your DAW via Firewire streaming and a plug-in which allows both control and automation. The unit has XLR analogue, AES digital, word clock, and MIDI connections, and is compatible with both AU and VST hosts. The unit will be available early in 2008.

www.lexiconpro.com

Millennia Music & Media Systems' HV-3R remote microphone preamplifier can be controlled via a plug 'n play Pro Tools interface, via MIDI or the supplied AE-Logic software. Using this, you can link and control up to 99 units giving a total of 792 channels of transformerless preamplification with FET based output stages.

www.mil-media.com

Muse Research has introduced a version of their Receptor rack – mountable plug-in playback module, the Komplete inside, which comes pre-loaded with Native Instrument's Komplete 5 software suite of plug-in instruments and effects. The unit itself sports MIDI, Ethernet, and USB interfaces, alongside analogue and digital inputs and outputs.

www.museresearch.com

The ADL 700 is **Presonus'** new single channel tube preamplifier, compressor, and equaliser designed by Anthony DeMaria. Based on the ADL 600, it features an all-discrete high voltage Class A channel strip. The unit is scheduled to ship in the first quarter of 2008.

www.presonus.com

The DMC-842 from **RME** is both an 8-channel AES42 interface and a controller for digital microphones. It can convert the inputs from up to eight digital microphones into various digital and analogue formats, including ADAT. There's also a MADI option. The eight individual sample rate converters offer external clocking options and the unit is remote controllable via MIDI.

www.rme-audio.com

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www.fairlightau.com

The OctaMic II from **RME** provides eight channels of 192kHz/24-bit analogue to digital conversion, with hi-class balanced microphone and line pre-amplification. Featuring a combination of sophisticated components and approved RME technology, it sports two ADAT, four AES/EBU, and one SPD/IF outputs; low distortion, excellent signal to noise ratio, and perfectly linear frequency response.

www.rme-audio.com

Rupert Neve Designs' Portico 5014 SFE (Stereo Field Editor) features Rupert Neve's custom transformer design and discrete component circuitry. The unit's features include a width control for increasing/decreasing stereo image width and a depth control for adjusting sound stage elements' spatial positioning. There's also a difference channel insert and EQ.

www.rupertneve.com

SSL has a new stereo compressor module for their X-Rack modular mix system. This double width module delivers the classic sound of the G-series compressor but with higher bandwidth and SSL's low noise Superanalog design. Several units can be linked for surround processing and the unit features a gain meter from the classic SSL console range.

www.solid-state-logic.com

SPL's Transducer is an analogue cabinet and microphone simulator that was designed in co-operation with the German guitar amplifier specialists Tonehunter. The unit allows you to quickly audition the various cabinet and microphone simulations and gives you full control over microphone positioning.

www.spl-usa.com

TL-Audio has introduced the Ebony series of processors. The A1 is a discrete class A dual tube preamplifier. The tube stage has a variable drive option to allow you to dial in as much of the tube colour as you wish, and the unit sports balanced XLR connections and analogue VU meters. The DO-2 digital SPDIF digital interface can also be fitted alongside various other multi-input options.

www.tlaudio.co.uk

Universal Audio has released a signature edition of its LA-610 reissue tube preamplifier and DI unit. Identical to the original Bill Putnam designed device, the limited edition features hand picked vintage 'new as old stock' valves and Cinemag output transformers. It contains the same optical compressor as the acclaimed Teletronix LA-2A.

www.uaudio.com

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Camera Technology: Camcorder Evolution Part 4

KEVIN HILTON looks at the advances of file compression and what it meant for camcorders to bring them into the new millennium.

SOUND PRO'S VIDEO GLOSSARY

Time-Division Multiplexing (TDM)

This is a form of multiplexing, usually in the digital domain, which enables two or more signals or bit streams associated with a video frame to be moved as if at the same time, processed as sub-channels of a single communication transport, but in reality alternating which is on the channel at a particular time. The time division aspect comes into play by the available domain being separated into a number of recurring pigeonholes, or timeslots, each of which has a set duration, with one for every sub-channel. In this way a sample, byte or data block of sub-channel 1 is sent during timeslot 1 and so on. An individual TDM frame is made up of one timeslot per sub-channel. Once the final sub-channel has been transmitted the whole operation begins again for the next frame.

Compression has been the key to many of today's video technologies, and indeed it is the crucial element in creating smaller camcorder tape formats and the subsequent hard disc and solid state media. The general principle is that once a basic picture scene has been recorded only the changes in movement are registered until a new sequence begins. Known as redundancy removal this is a major feature of MPEG-2 compression, which forms the basis of modern digital television transmission and will be explored in greater depth in forthcoming Video Guides, and is also a key factor in the operation of DV and its variants.

MPEG-2 comprises two forms of data compression: spatial, also known as intra-frame, and temporal or inter-frame. DV uses only intra-frame, which delivers a lower rate of compression than inter-frame, with a ratio of approximately 5:1, but that is considered good enough for the job. Full MPEG-2 has a variety of frame types but the intra-frame version offers just one, the I-frame (the I standing for 'intra', as in "on the inside" or "within"), also known as the key frame.

Making a GOP

The MPEG-2 system creates a video sequence by grouping still images, forming a GOP (literally a group of pictures), which are played back so a viewer can monitor the movement within the space of the picture (spatial motion). An I-frame is an individual shot of digital information that the compression device registers independently of preceding and subsequent frames, saving the data it needs to represent that particular frame. A high proportion of I-frames in a picture ensures good quality, although as these key frames hold the highest number of bits they demand greater amounts of storage. I-frame pictures are also well suited to being edited and manipulated for visual effects.

In DV recording luminance (Y) is sampled at 13.5MHz and chroma (Cb for blue, Cr for red) at 6.75MHz, with 8-bit measurement of the Y, Cb and Cr information to produce a preliminary data rate of 214Mbps. For the recording process itself this is lowered to 25.146Mbps by using discrete cosine transform (DCT) spatial redundancy and variable-length coding. Bit reduction is the same as for the DVB digital television transmission system, using blocks and macro-blocks, which can be seen if the recording mis-tracks or is faulty.

Data Shuffle

Once images have been captured and signal processed the information goes through analogue to digital conversion during the recording process. After this the data are "shuffled"; 16 macro-blocks are sampled from non-sequential image groups and a seemingly arbitrary series of pictures created. This is done to prevent any statistical distortion caused by compression ratio bias and also ensures the highest quality of stills and effects pictures on reproduction.

The actual sequence of images is restored further down the processing chain by a de-shuffling process, prior to the material being committed to tape. The data are then compressed and undergo processing to guard against dropout and mis-tracking by the record and playback heads. Video and audio are then multiplexed into a single stream, along with control and associated information, using a time-division multiplex (TDM, see Glossary) device. Surprisingly, video accounts for only approximately half the length of a head scan, the rest being taken up by audio and control. After that the entire stream undergoes a modulation process before passing through a drive amp and then on to the record heads.

DVCAM was developed by Sony as a semi-professional version of DV, although it has been used widely by broadcasters and independent filmmakers as a lightweight, portable shooting tool that can reduce production costs. The format uses the same type of tape cassette as DV and MiniDV but the recording medium travels through the mechanism at a 50 percent higher speed than those of the other two, resulting in a greater track width. Encoding of video and audio is as for standard DV but the broader tracks reduce the risk of drop-out. DVCAM camcorders are compatible with DV tapes but the format's own cassettes accommodate only two thirds the recording

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Camcorder Evolution Part 4

capacity of the longer media.

An extension of the MPEG-2 compression used for camcorders is MPEG IMX, again conceived by Sony's R&D department. This appeared in 2001 and was designed to advance the established Digital Betacam family, using MPEG compression at a higher bit rate than for Betacam SX. Under the IMX scheme the video signal works to the CCIR 601 standard for recording interlaced analogue pictures digitally. This is done under the MPEG-2 4:2:2 Profile @ ML format, with three options for compression quality and quantity ratios: 30Mbit/s (giving a compression ratio of 6:1), 40Mbit/s (4:1) or 50Mbit/s (3.3:1), which give different quality/quantity settings.

IMX

MPEG IMX was used initially for tape-based camcorders and now has been applied to Sony's range of hard disk acquisition equipment, XDcam, which last year moved into the realms of solid state recording media. A feature of IMX camcorders and VT decks is the ability to connect the video to IT equipment, particularly over communications networks, which is an advantage for news teams working on location and needing to file stories to tight deadlines.

The Sony IMX camcorder range was established with the MSW-900, whose latest successor is the MSW-970P, a switchable widescreen unit based on Power HAD (Hole Accumulation Diode) EXTM CCDs for higher picture quality. It is able to work in high definition, either 50i (interlaced) or 25P (progressive).

This, and extensions of other manufacturers' camcorder ranges, has given journalists and producers a broad choice of tools for shooting news, sport, documentaries and even low budget films. Programme and film makers got their first taste of lower cost digital camcorders that better suited professional needs following the introduction of consumer and semi-professional DV and MiniDV in 1996, with parallel development into broadcast with Sony DVCAM, D9 from JVC and Panasonic's DVCPro.

A Revolution

Looking back on how the production of programmes changed during the late 1990s the adjective revolutionary is not an excessive one to use, although, like most revolutions, good and bad came from it in just about equal proportions. The now familiar fly-on-the-wall docu-soap was perfected and made more possible by these new technologies. DVCAM was even regarded as a threat to Beta SX and DVCPro, particularly if production budgets were tight. More commonly a mixture of cameras is used; DigiBeta, DVCPro or Beta SX in conjunction with a DVCAM or even a DV machine.

UK news organisation ITN nailed its ENG colours to the Panasonic DVCPro mast but in 1998 also bought ten Sony Beta SX portable editors and nine DVCAM DSR-300P camcorders to be carried in SNG (satellite news gathering) trucks in case those vehicles arrived at the scene of a story before the main crew. The explanation at the

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Camcorder Evolution Part 4

time was that DV-based camcorders were a good low-cost form of the more expensive, full broadcast quality 6mm camcorders already in use.

The appeal of small DVCAM camcorders was their lightness and ease of use, allowing operators to get closer to the action and non-professionals to come up with something usable. Possibly the most popular unit of this kind was the Sony DSR-PD1 palmcorder, which was used for undercover shooting and diary inserts into other footage.

This camcorder has been upgraded and improved over the years and the current version of the old PD1 is the DSR-PD170P, a three 1/3-inch CCD device that has an effective shooting range of 400,000 pixels. The size of the CCDs give better sensitivity, improved signal-to-noise ratio and help reduce smear. The optical housing takes a 58mm lens with 12x zoom.

Monitoring is on a fold-out, tilting colour screen using hybrid LCD panel technology, which gives a defined picture in bright conditions. For more precise framing there is an 180,000-dot LCD black-and-white viewfinder, giving 500 lines of horizontal resolution. Camera movement is a problem with smaller camcorders, so the DSR-PD170P has a Super SteadyShot feature that can determine individual shifts in the horizontal and vertical planes. This is done using a prism built into the lens that makes adjustments if any instability is detected.

Like most camcorders in the professional DVCAM range the PD170P is able to record and playback in both its own format and in DV, although the latter is only in standard play. The PD170P is used by both videographers, a general, often semi-professional category that includes people who shoot wedding videos for some of their living, and broadcast journalists. The DVCAM range is completed by three larger camcorders that are used for news and general programme production.

The DSR-250P has many of the same features of the PD170P but in addition has many functions better suited to full broadcast operation. These include a number of time code options, among them: time code preset, user bit preset, preset/regen, rec run/free run and real time assign on user bit. There is also an audio synchroniser to lock audio to the video in DVCAM mode.

Interconnectivity

Another feature designed for better interconnectivity is an integral i.LINK unit that enables a VT deck to be connected, with the camera working as an editor in playback mode, giving an accuracy of five frames. This also allows direct recording to the VT from the camcorder. Still images can be taken from the camcorder and stored on Memory Stick as a record of scenes.

Succeeding the workhorse DSR-570WSP and DSR-390P are the DSR-450WSP and DSR-400P, both of which run on 2/3-inch Power HAD EX CCD chips and are designed for larger scale general programme making. As many TV producers are liberal types both these DVCAM camcorders have the added attraction of being produced under the scrutiny of Sony's Green Management scheme.

The camcorder saga continues in the next Video Guide with the advent of high definition and the shift towards other kinds of recording media.

news

The forthcoming second series of Live from Abbey Road began shooting at the north London recording studio during October 2007. The aim of the programme is to show well-known artists in an intimate but familiar setting, playing songs often in new versions. The 12 hour-long programmes that make up the run were shot in high definition using Panasonic AJ-HD900 DVCPro broadcast cameras.

Live from Abbey Road is seen as a challenger to the BBC's long-running Later series, presented by Jools Holland. Shown on Channel 4 in the UK, NHK in Japan and by the US Sundance Channel, the shows are directed by Annabel Jenkel. The second season has a line-up of 36 artists, starting with Canadian jazz singer Diana Krall.

As well as the DVCPro camcorders Panasonic is supplying LCD monitor screens, with 50-inch and 42-inch plasma displays and 50-inch HDTV sets as a backdrop in the studio itself. The producers of the series are Michael Gleason and Peter Van Hooke, who declared themselves pleased with the visual results.

"The image quality from the HDX900 camera is excellent, to the order of 20 percent better than what we have experienced with other equipment previously," said Gleason. "We are very excited to be collaborating with Panasonic."

This is all well and good but some cynicism creeps in on discovering that Panasonic is the main sponsor of the series, which is due to begin its run during June this year.

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AUDIO MEDIA

Sound Reinforcement

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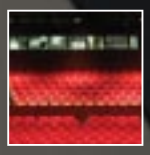

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BEN BURNS plugs in and gets turned on by Audio Limited's latest wireless receiver and associated transmitters.

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High Barn's grand piano gets up close and personal with this high-definition PianoMic system from Earthworks Audio; SIMON ALLEN likes what he hears.

AMSR is the regular AUDIO MEDIA Sound Reinforcement section, aimed squarely at SR professionals across Europe. Following the *Audio Media* ethos, the emphasis will be on the product reviews and technical features written by working industry professionals that anybody in SR will find relevant and useful.

Texan audio snakes manufacturer I/ONE Connects has announced a number of new upgrades for 2008, including a 3U XLR panel with XLR connectors for 16 analogue inputs and outputs, plus four stereo digital inputs and outputs (AES, S/PDIF), while eight channels of ADAT I/O remain on the 1U main unit, combining to provide a total I/O channel count of 32.

www.ioneconnects.com

Aviom has worked with Digidesign to allow the latter's upgraded D-Show 2.6 software to support the former's Pro16 Series personal mixers. Additionally, the optional Digidesign ANO A-Net Output Card for its VENUE Stage Rack allows Aviom's personal mixers and audio networking devices to be connected directly to a VENUE system to create a straightforward, cost-effective, artist-driven monitoring solution.

www.ambersound.co.uk

www.aviom.com

Technomad Associates has announced that it is shipping new versions of its Vienna 16 and Paris 616 weatherproof outdoor loudspeakers. These Version8 models add compression drivers that provide an added 3dB of maximum continuous SPL, plus an added 10dB dynamic range, to ensure voice intelligibility and musical output at all volume levels.

www.technomad.com

Klark Teknik has introduced the Square ONE Splitter, the third model in its Square ONE range, combining a simple eight-channel solution with a high-performance Midas XL8 live performance system-inspired pre-amp design (providing 143dB dynamic range and high CMRR to handle input levels of up to +22dBu), housed in a roadworthy, 2U rack-mountable steel chassis.

www.klarkteknik.com

VENUE Becomes Bigger And Better

Digidesign introduces and announces new VENUE hardware and software

Californian-headquartered digital audio production system manufacturer Digidesign has introduced Mix Rack, a new hardware option for its VENUE systems that combines all stage, local audio I/O, and DSP processing into a single, compact 11U rack space. Fully compatible with both D-Show and D-Show Profile mixing consoles, Mix Rack's base configuration comes complete with two Mix Engine cards, D-Show 2.7 software, VENUEPack 3.0 plug-in bundle (see below), a built-in EXc Ethernet port for remote control, 48 fully-recallable XLR mic/line inputs, 16 analogue XLR line inputs, eight analogue TRS line-level I/O, AES or S/PDIF I/O, MIDI, Word Clock, and Com/Aux input (XLR/TRS).

Digidesign's just-released D-Show Version 2.7 software upgrade for the VENUE live sound environment – expanded to fully support the above-mentioned Mix Rack hardware, also features a number of new workflow enhancements for all VENUE systems, including an AFL Follows Auxes feature (automatically puts the mix in after-fade listen mode when an Aux Send or Variable Group is assigned to the input encoders); a self-explanatory Top Level VENUE System Lock; an ability to view VCA contributions in real time; plus an automatic plug-in updater.

Digidesign has also announced availability of VENUEPack 3.0 for its VENUE live sound systems. VENUEPack 3.0 – shipping with Mix Rack and FOH Rack – features updated versions of the same plug-ins bundled in VENUEPack 2.0 (Impact, Reverb One, ReVibe, Smack!, BF-3A, Pultec Bundle, Slightly Rude Compression, Classic Compressors Bundle, MoogerFooger Bundle, d2, d3, and TrooTrace Audio Analysis Bundle), while VENUEPack Pro 3.0 – shipping with FOH Rack and Mix Engine Card purchases – includes five powerful plug-ins (JOEMEEK Bundle, Fairchild 660 and 770 Bundle, Voce Bundle, Eleven, and Echo Farm).

Digidesign UK and Ireland
+44 (0)1753 655 999
Digidesign (HQ)
+1 650 731 6300
www.digidesign.com

A&H Expands And Updates iLive Family

Cornish console manufacturer Allen & Heath has added the iDRo Mini Rack to its iLive digital mixing system, a 2U modular rack-mounting processing unit sporting all the iLive processing features for networked audio systems, sharing the same processing PCBs as the iDR10 Mix Rack that provides I/O and all processing and mixing functions for the current iLive System – namely, 64 inputs, with full dynamics and EQ, into 32 mixes with dynamics, EQ, and graphic EQ. The iDRo also features the new so-called 'iDR-64 Mix Engine Rack Extra' PCB, providing DSP capabilities including eight effects engines.

Allen & Heath has also released V1.2 of its iLive system software, which comes preinstalled in its new iDRo processing unit. This new OS provides many new tools, including a range of effects, such as delays, reverbs, ADT doubler, flanger, and chorus, as well as a four-band EQ on effects returns, the option to insert an effects engine into a channel as if it were an external device, plus a patchbay extension making external inputs available for matrixes, groups, aux, and mains.

Allen & Heath
+44 (0)1326 372 070
Allen & Heath USA
+1 800 431 2609
www.allen-heath.com

Electro-Voice Processes And Speaks

E-V Launches DC-One, EVID FM Series, ZX3, and SB2A

Electro-Voice has launched the DC-One 24-Bit Digital Sound System Processor, designed for users of small- to medium-sized sound systems, and accepting analogue or digital (AES-EBU) input signals. Based on a powerful new SHARC processor, the 1U rack-mountable device is compatible with all settings from other Electro-Voice signal processors. Its front panel access control allows users to select from 60 factory and 20 user presets while editing or locking individual preset parameters. PC editing is available via a front panel-mounted USB connector.

Electro-Voice has introduced its EVID FM Series of flush-mount in-wall speaker systems, comprising the FM6.2 (featuring a six-inch woofer, six-inch tuned passive radiator, and one-inch tweeter combo) and FM4.2 (four-inch woofer, four-inch tuned passive radiator, plus one-inch tweeter). All components are housed in a shallow, fully sealed enclosure for consistent performance and superior sound isolation from adjacent rooms, while secure phoenix-style pass-through connectors allow for easy wiring and installation.

Electro-Voice has also introduced the ZX3, a two-way loudspeaker featuring the new DX3121 12-inch woofer and ND2 neodymium compression driver, combining to produce a maximum 131dB SPL with 97dB sensitivity via either 600W continuous power handling (passive mode) or 500W (LF) and 40W (HF) in bi-amp mode. Available as a weatherised version in black or white finish, the ZX3 shares the same functionality as the larger (15-inch) ZX5, with 90° x 50° or 60° x 60° horn dispersion patterns, 45° or 55° monitor angles, and seven M8 rigging points.

Finally, Electro-Voice has also introduced its new SB2A powered 12-inch subwoofer featuring dual 350W (into 8Ω) amplifiers. Other notable features include a switched powered speaker output to drive either an external 8Ω passive subwoofer or full-range loudspeaker, making the SB2A a very versatile and compact sub-system drive-type solution, easily configurable with a variety of loudspeakers for a variety of sound reinforcement applications.

Shuttlesound
+44 (0)20 8646 7114
www.shuttlesound.com
Telex Communications
+1 952 884 4051
www.electrovoice.com

A-T Enters IEM Market

Problem-solving audio equipment designer, manufacturer, marketer, and distributor Audio-Technica has entered the IEM market by launching its M2 and M3 UHF systems, both including a lightweight body-pack stereo receiver and dual 1/4-inch/XLR-equipped stereo transmitter. The M2 is designed to accommodate semi-professional and solo musicians, presenters, and small- to medium-sized concert systems with 10 UHF frequency bands (four available for European use), while the M3 fulfils larger-scale music, theatre, and broadcast production requirements with six fixed selectable frequency bands and three user-programmable bands (with 16 channels each).

Audio-Technica has announced upcoming (April 2008) availability of the PRO 92cW sub-miniature omni-directional headworn microphone (RRP £79.95, including VAT), a low-profile design – developed primarily for educational, corporate A/V presentation, broadcast, and theatre sound applications – that ultilises a small condenser capsule, offering a comfortable, contoured earpiece with a bendable boom to allow users to wear it on either ear. Available in a non-reflective black or 'theatre' beige finish, the PRO 92cW ships with a 55cm CW cable, attachable windscreen, and clothing clip.

Audio Technica (UK)
+44 (0)113 277 1441
www.audio-technica.co.uk
Audio-Technica (US)
+1 330 686 2600
www.audio-technica.com

Danley Sound Labs has introduced the TH-Mini, a tapped-horn subwoofer featuring a single 12-inch long excursion driver housed in a patent-pending, compact form factor enclosure measuring 24 inches in length, intended for small bands, corporate events, plus space-limited entertainment and performing arts venues. The loudspeaker is quoted as delivering 128dB/131dB SPL Peak over a 45 to 160Hz (±3dB) operating frequency.

www.danleysoundlabs.com

Dynacord has launched the portable D-LITE 1000 system, comprising two D 8 satellites paired with the active PowerSub 312 with a combined weight of 45kg, the latter featuring an integrated lightweight 800W + 2x 250W digital power amplifier that allows connection of two more D 8s plus a passive Sub 112 for further bass extension. Onboard protective circuitry and audio limiters combine to guarantee optimal operating security.

www.dynacord.com

Crown International has commemorated its 60th anniversary and two-decades-plus production of its industry-standard Macro-Tech Series power amplifiers with a special, one-time (600-unit) production run of 'Anniversary Edition' versions of its MA-2402, MA-3600VZ, and MA-5002VZ models, all featuring copper-plated front panels (including handles, knobs, and buttons), to be shipped in a custom wooden crate.

www.crownaudio.com

Adamson Systems Engineering has announced that its Metrix Sub-t compact convertible cardioid sub now comes with a built-in pole-mount socket for us with the Metrix Wave-t's pole-mount kit as standard. The pole-mount supports -5°, -10°, and -15° positions for the bottom Wave enclosure, and can be mounted on top of a ground stack or Metrix Subs, or used independently with a stand.

www.adamsonproaudio.com

Winter NAMM 2008 Review - The Live Edition

The Winter NAMM show in Anaheim, California, is one of the biggest music trade events on the international calendar, and this year did not disappoint, with over 88,000 visitors from over 100 countries through the doors. If it's the new SR product you're interested in, look no further than this page. If you want to know more about the studio side, see page 6.

Elkhart, Indiana-headquartered pro audio amplifier, microphone, and systems control product manufacturer **Crown International** has commemorated its 60th anniversary and two-decades-plus production of its industry-standard Macro-Tech Series power amplifiers with a special, one-time (600-unit) production run of 'Anniversary Edition' versions of its MA-2402, MA-3600VZ, and MA-5002VZ models, all featuring copper-plated front panels (including handles, knobs, and buttons), to be shipped in a custom wooden crate.

www.crownaudio.com

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www.electrovoice.com

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www.audio-technica.com

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www.digidesign.com

Kidderminster-headquartered British analogue and digital signal processing specialist **Klark Teknik** has introduced the Square ONE Splitter, the third model in its Square ONE range, combining a simple eight-channel solution with a high-performance Midas XL8 live performance system-inspired pre-amp design (providing 143dB dynamic range and high CMRR to handle input levels of up to +22dBu). Housed in a roadworthy, 2U rack-mountable steel chassis, the new unit is ideal for ranging from concert sound to recording.

www.klarkteknik.com

Aviom announced a collaboration with Digidesign which will extend Aviom's A-Net capabilities. Digidesign's D-Show 2.6 software has been upgraded to include support for Aviom's Po16 Series. The Digidesign ANO A-Net Output card is now an option for Digidesign's Venue Stage Rack that now allows users to connect the popular Aviom Pro16 Series personal mixers and audio networking devices with additional features such as Auto Link, which automatically links channel pairs across all Aviom personal mixers.

www.aviom.com

Harman Pro Group introduced HiQnet System Architect version 1.6, which includes several new import and export features to make it easier for integrators and consultants to design and implement presets for discrete venues and systems. This version 1.6 also includes a new AKG plug-in for offline configuration of AKG WMS 4000 systems, a new graphics engine for a more responsive user interface and master control panels are now configurable at device channel level providing greater detail of system control. The upgrade includes Partial Venue File Export and Venue File Import.

www.harmanpro.com

dbx Professional Products introduced two new direct injection boxes into its product line. The dB10 (passive) and dB12 (active) feature a cast-metal chassis. Both include features like quarter-inch input and parallel thru jacks, transformer isolation, balanced XLR output, ground lift switch, three-position pad switch, selectable polarity invert, and high-cut filtering. Also so was the SC 64 (System Core) and SC 32 Digital Matrix Processors featuring Wizard-driven system configuration using Harman's HiQnet System Architect. The SC 64 and SC 32 host a total of 64 and 32 analogue I/O respectively, configurable in banks of eight. The DriveRack series got a new member too, with the PX Powered Speaker Optimiser, specifically designed to enhance and optimize the performance of powered speakers.

www.dbxpro.com ▸

On the **Soundcraft** stand was a new GB Series console, the GB2R. This 19-inch rack-mountable mixer is designed specifically for smaller installations in churches and performance venues, or for small portable PA systems. It will also find friends in broadcast where its high quality and feature set will be very appealing. The GB2R offers either 16 mono inputs to a stereo mix output, or a 12.2 version with 12 mono inputs, two full-feature stereo inputs and two group busses, each model having six auxiliary sends. The GB2R inherits both the GB30 mic preamplifier and GB30 equaliser designs from the larger GB4 and GB8. Also new were updates to the Soundcraft Vi Series, with the addition of support for multiple stageboxes, and the ability to configure the Vi Series consoles offline on a PC (with the Vi Offline Editor software), with download via USB memory drive.

www.soundcraft.com

Dynacord had a raft of new boxes to demo at the show, starting with the new D-LITE D8 two-way full range speaker system and the Sub 112 12-inch subwoofer. In addition, Dynacord responded to requests for a light speaker system for small- to medium-sized professional events with new active D-series boxes – the D 12A two-way system, and the D 12-3A three-way. Lastly, Dynacord demonstrated its new PowerSub 312 active subwoofer with three-channel power amplifier for easy creation of a subwoofer satellite system.

www.dynacord.com

Highlighting **QSC's** 40th anniversary, the company launched the new GX Series amplifiers: GX3 and GX5 (rated 300 and 500W respectively). QSC stated "Outfitted with roughly two times the continuous power capacity required by the top-selling non-powered loudspeakers on the market, the GX Series is the simplest and best answer to the question 'what power amp do I need?'"

www.qscaudio.com

Royer Labs, famous for its ribbon microphones, announced the new Live Series microphones., Royer Labs has created road ruggedised versions of three of its current models, specifically for the live sound/touring professional. The three models are the SF-24 Live Phantom Powered Stereo Ribbon Microphone, and the R-121 Live and R-122 Live models. The ribbon thickness on all three has been increased and all are priced the same as the studio versions.

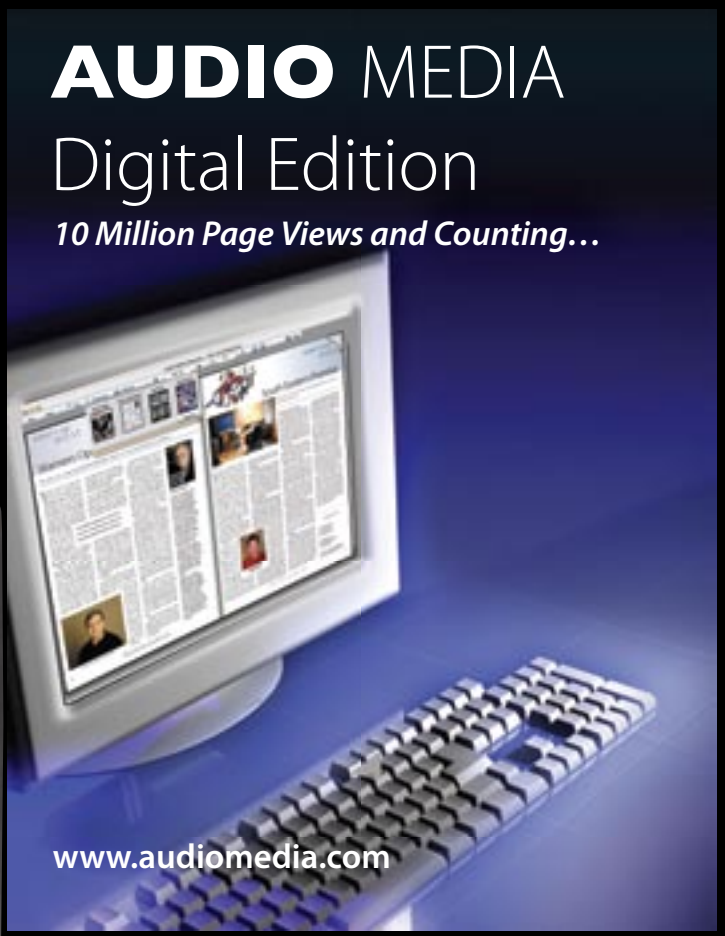
www.royerlabs.com

Heil Sound showed it's new PR 35 dynamic microphone at NAMM. Drawing on the technological advancements within the PR 30, the PR 35 features a large diameter dynamic element that is mounted on an internal sorbothane shock mount. There's also a dual wound voice coil with a magnet structure of neodymium, iron, and boron. It has a frequency response extending from 40Hz to 18kHz, and an output level of -2.9dB at 1000 Hz.

www.heilsound.com

Lectrosonics introduced the company's latest modular wireless receiver – the VRM WB Venue Wideband Receiver. Utilising Lectrosonics' Digital Hybrid Wireless technology, the new VRM WB extends the versatility of the company's Venue systems while offering greater functionality. The new VRM WB Wideband Receiver covers the entire UHF band from 537 to 768MHz in a single unit, and is compatible with any Lectrosonics VRS standard module or VRT tracking filtered module in the standard UHF range. It offers a 6-channel modular configuration, three diversity modes, built-in zero-gain antenna amplifiers, DSP emulation modes for compatibility with analogue wireless systems, as well as USB and RS-232 computer interfaces and the company's VRpanel software.

www.lectrosonics.com



WYVERN THEATRE'S RCF REFURBISHMENT

Wyvern Theatre recently refurbished its auditorium to the tune of £1.3 million. JONATHAN MILLER takes a train trip there to talk shop with Stage Electrics Business Events Manager Simon Kenning and RCF UK Technical Sales Consultant Greg Oliver, collectively responsible for persuading financers Swindon Borough Council to opt for an RCF sound system therein.

Swindon – Wiltshire's so-called 'railway town' – arguably remains best known as the site for famous British engineer Isambard Kingdom Brunel's planned railway works for his Great Western Railway (GWR) that linked London (Paddington) with the West Country, South West England, and South Wales, originally driven by Bristol merchants hell-bent on maintaining their port's prestigious position as the UK's second port – and North American traders' favoured one at that.

I stepped off the 12:45 First Great Western service from London Paddington on a drab December day for what should have been – according to Wyvern Theatre's website – "just a 10 minute stroll through the town centre to the theatre, which is situated at the top of town." Funny how ten minutes can so easily extend into a half-hour-plus traipse all around the houses when some miscreant has seen fit to 'repoint' a once-helpful brown Wyvern Theatre tourist-style sign... in completely the wrong direction! How I laughed while trying to see the funny side of such tomfoolery. Almost.

> "The Wyvern is one of the first venues in the UK to have the Roland Digital Snake as a fully-installed system; a digital audio transmission system running on CAT 5."

A Room With 615 Views

In keeping with its architecturally suspect surroundings – when retrospectively viewed from a more designer-savvy new millennial standpoint, the 615-seat Wyvern Theatre – named after a mythical beast (serpent/dragon type thing), which was once the emblem of the Kings of Wessex – was aptly opened in September 1971 by Her Majesty The Queen and HRH Prince Philip, Duke of Edinburgh, with each of those seats being positioned to be no further than 70 feet from the auditorium's 48-foot working-width stage.

The Wyvern is presently configured in a Right Circle, Right Stalls, Centre Circle, Stalls, Front Stalls, Left Circle, and Left Stalls seating arrangement in a sort of semi-hexagonal shape, in what could cruelly be called a concrete shell. "It's not a classic theatre, in that respect; it's a modern, contemporary build, so you just have to take it in the context of what it is." So says Simon Kenning, Business Events Manager with Stage Electrics. And Simon should know, having seen that semi-hexagonal concrete shell up close and personal, courtesy of the theatre's temporary closure for a £1.3 million refurbishment of its auditorium – with a new lighting, sound, communications, and cinema package accounting for around 25% of that not inconsiderable sum. The refurb saw the theatre stripped back to the bare bones after asbestos was found to be airborne in its roof. Not good. "Everything had to be gutted in the main auditorium," notes Kenning, before adding: "Stage-side was okay, but everything audience-side had to be completely gutted, so the whole building became a shell in there."

Just as well that almost 40 years after its Royal opening, that same auditorium was beginning to look (and sound) a tad tired. Kenning provides a brief background to his company's connection to its costly refit, explaining, "We were approached by Swindon Borough Council to do a specification against a tender. We provided that to them, and they accepted our quote."

Pressed to expand upon this tender process, a hurried tale of sleepless nights soon becomes apparent, as Kenning further reveals, "We had 30 areas in the specification that had to be met, ranging from lanterns, to cabling, sound infrastructure, stage management positions, cue lights – the whole package, really, so it was extremely tight. The tender was out in March [2007] with less than two weeks turnaround, so we got it in, and within the week that it was back we were given the job – quick as that. It had to be, because they wanted to be open by September, so there were 16 weeks of build time, basically."

RCF, Anyone?

Even at that tender tendering stage, Kenning already had Italian professional audio product developer/manufacturer RCF Audio – Stage Electrics' preferred audio supplier – earmarked for handling (almost) all audio aspects of Swindon's soon-to-be-refurbished theatre: "I'd sort of decided which products I wanted, so I went to Greg, and said, 'Can you just make sure that this system is fit for purpose for the space that it's required in?' We liaised, and did a site visit, checking all the hanging points to make sure that everything was correct."

Cue Greg Oliver, RCF UK's Technical Sales Consultant, and a convincing individual, if ever there was one: "Basically, we're one of ►

Stage Electrics' Simon Kenning and RCF's Greg Oliver.

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Stage Electrics' preferred audio suppliers. They try to keep good suppliers with which they've had good relationships in the past – RCF being one of them..."

Cutting in, Kenning concurs: "We only have two, actually, and RCF is top of that list, every time – for all the reasons Greg said."

Continues Oliver: "From RCF's point of view, when Stage Electrics has its regular business manager's development meeting down in Bristol, its key suppliers in the different fields that it covers normally get asked to come down and present any new products. I go down to Bristol quite a bit with a vanload of kit to demonstrate to the guys, so all of them are normally pretty aware of what we do – what's new, what's not, what's working, or whatever. The kit that Simon spec'd was right for this project; it was just the horn dispersions that we changed."

Before the kit came close to being installed within Wyvern's fresh environs, Kenning and Oliver had to sell the RCF route to theatre staff intent on a more costly one that may not wash with those holding the purse strings. "The theatre was not a client, in our case; it was the council that was paying for the venue," explains Kenning. "They really didn't care whether it was an RCF box or a L-Acoustics box, and were looking to us to give them that guidance. At the very start I said to them, 'The RCF is a perfectly good speaker for the application that you're looking for.'"

Oliver throws forth his ten-penneth worth thus: "A lot of theatres now want higher range speakers; RCF are moving into the higher realms, but most theatres I walk into with either Stage [Electrics] or some other customer want either d&b [audiotechnik] or L-Acoustics, which is just a wish-list, really, because – unfortunately for me – most of them can't afford it. So Simon put RCF forward to Michael May, the Technical Manager here, and to say that he needed pushing and swaying is an understatement! It was quite an uphill struggle."

Rack around the clock

Kenning: "They wanted d&b here; it was as simple as that. We said, 'You don't have the budget; you need to rethink this.' So I got Greg down to Bristol; the Technical Manager came along, and he was bowled over by the sound quality."

Credit where credit's due for a not easily flummoxed Oliver was forced to set up in Stage Electrics' cavernous Avonmouth (Bristol) warehouse, "...which isn't a great demonstration area, because it's a work environment. But I set up various different Acoustica [installed sound] setups, and just gave them a bit of a run-through, saying, 'Look, this is RCF; this is what you're hearing. I'd gladly put this up against a d&b box and ask if you could tell me the difference.' There's a big difference, price-wise, of course, but acoustically there's not a great difference."

"Basically, the entire audio system is RCF – apart from the [Roland] audio transmission and a couple of paging speakers in the foyer down below, which are some small TOA boxes"

A Done Deal

Suitably sold on both counts, a mostly RCF-based sound system was duly delivered following a good ten weeks of thankless cable pulling on the part of Kenning's hard-working, on-the-ground Stage Electrics colleagues. "There's something like 4km of CAT 5 we pulled in for this job – and that's without all the lighting circuits," he notes, with a hint of justifiable pride. "The Wyvern is one of the first venues in the UK to have the Roland Digital Snake as a fully-installed system; a digital audio transmission system running on CAT 5, it features high quality, remote-controllable microphone preamps, configurable inputs and outputs, and immunity to RF and electrical interference. The system also offers built-in cable redundancy and will automatically switch to a backup cable should the main cable be compromised...

"Basically, the entire audio system is RCF – apart from the [Roland] audio transmission and a couple of paging speakers in the foyer down below, which are some small TOA boxes, and that's purely because of a specialist card we manufacture in-house that's got relay switching in it."

It's perhaps worth noting here the scale of Stage Electrics' nationwide operation; "We hold over a million pounds' worth of stock on a daily basis in our central stores operation in Bristol, so we do keep a lot of suppliers' stock in-house," Kenning says, such that they were able to supply all the specified RCF boxes – bar the subwoofers – directly to Wyvern Theatre.

No need for Oliver to feign surprise at this revelation; after all, "They're probably RCF's biggest UK customer."

Which leads us neatly onto exactly what RCF-badged boxes passed through the theatre's loading bay – with a view to not making the return journey for quite some considerable time. As Oliver (quite rightly) sees it, "The key thing with any installation is that the kit goes in, stays in, and doesn't come out for servicing much."

Such is the thinking behind Wyvern Theatre's RCF inventory, which Oliver reels off as follows: "A left and right front-of-house system consisting of two [Acoustica] C5212-L [long-throw two-way (12-inch high-efficiency woofer/two-inch neodymium compression driver-equipped)] speakers per side with a centre cluster of four more; four [Acoustica] C5215-W [wide dispersion two-way (15-inch LF/two-inch HF)] delays set in a sort of horseshoe shape to match the balcony; and then there's two double-18-inch [Acoustica S8028] subs, one a side."

This passive (500W-handling) speaker selection is driven by five RCF HC 2000 (2000W) and four HC 3200 (3200W) high-current amplifiers alongside an RCF DX 4008 four-input/eight-output digital loudspeaker management system "...that's taking care of all the crossovers and everything else." To which salesman Oliver adds, "There's settings for all the various speakers in there, but, in fairness, as with most RCF kit, the equalisation in the processor is very limited, because RCF can actually make the driver how they want it to, rather than having to EQ it to get it sounding how they want."

Kenning sings yet more Acoustica praises: "It's an extremely clean, efficient box, and, as Greg was saying, there's no need to be EQ'ing it. The sound is just there; it doesn't need any changes doing to it."

Rounding off Wyvern's RCF audio proceedings is a so-called show relay system (configured to provide feeds to dressing rooms, BGM to foyer, and two-zone paging to front-of-house and dressing rooms), comprising two rack-mounted (1U) PR 4092 nine-input/two-output pre-amplifier/mixers; a (1U) PD1066 zone switcher (with five DM3067 announcement microphones); a (1U) rack monitoring and power supply unit; a FLEXA modular amplifier system (with an MF6000 frame, PS 6640 640W power supply, and three UP 6241 modular power units); plus 18 PL81/A ceiling speakers dotted throughout various public spaces, including the theatre's tasty new coffee bar, Wyvern Bites, scene of my festive sit-down tête-à-tête between Kenning and Oliver.

Successfully installed and tested on time, Kenning witnessed said sound system in action for the first time when attending the reopened theatre's first public performance on September 21: "It was a straight play, so there wasn't an awful lot to listen to, but by all accounts the staff here are extremely pleased with its performance." AM

INFORMATION

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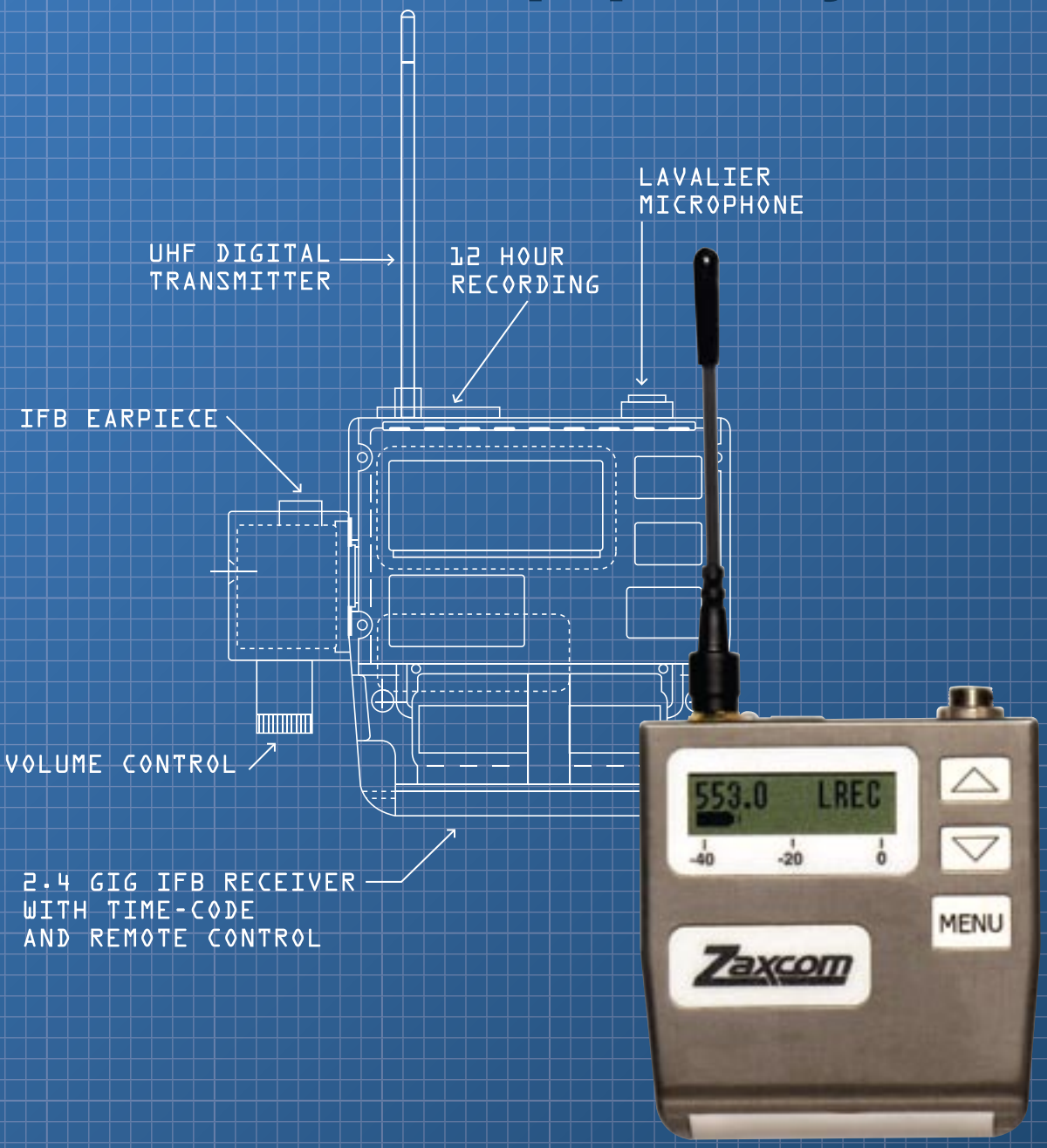

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AUDIO LIMITED 2040 SERIES

WIRELESS RECEIVER AND TRANSMITTERS

BEN BURNS pulls all the leads out to go completely wireless with Audio Ltd.'s new 2040 Series.

UK-based Audio Ltd. has been involved with audio for film and TV production since the 1960s. It's one of the industry's leading brands when it comes to wireless audio for film and TV. You can find products like the 2020 radio system adorning the shelves of the UK's biggest production and hire companies.

The new 2040 range, design for both the studio and theatre markets, includes a rack-mounted receiver for two to four channels, and a selection of transmitters for specific applications. The whole system is ultra compact and uses very modern lightweight materials with great strength. By integrating features usually obtained by using extra equipment, such as antenna splitters, you can be sure that the components of the system are correctly aligned and operating efficiently.

RK2040 Receiver Rack

The heart of the 2040 system, containing two to four receivers in a 1U space, the RK2040 can be powered from any DC source between 10v and 18v, even a car battery will work. Once you get a power source connected, simply fumble with the very well protected power switch till it clicks, and the unit will initialise each screen in order. There is no hanging about for the system to boot up, it's ready from cold in about six seconds.

Each rack includes active antenna distribution with two BNC inputs and outputs, allowing two antennas to be shared between two racks (eight channels in 2U of space). The whole design and concept is optimised for minimum size, the result is a feature rich package at least half the size of just about anything similar on the market.

Using the system could not be any easier. A screen is dedicated to each receiver displaying the state of audio and RF levels and also the name, frequency, battery level, and audio output level of each transmitter. The necessary information is displayed clearly in dark conditions thanks to the backlit LCD screens, with adjustable brightness and contrast settings to suit.

When you need to change a receiver setting, the four push switches adjacent to each screen provide a quick way to navigate a simple menu system. All the settings for the receiver can be changed from here, and information from a currently tuned transmitter may be monitored here, like the battery level. The RF level and audio level are also displayed.

The connection panel on the back includes two antenna inputs and two antenna outputs on 50Ω BNC posts. The power input is a 4-pin XLR connector, for use with the supplied mains transformer or sources like a camera battery pack – anything DC between 10 and 18volts will work. Two 9-pin D-Sub connectors are used for the computer bit, which uses RS485 to communicate with a PC up to 1000m away over twisted pair cable. By connecting adjacent racks in a daisy chain, up to 48 receivers can be controlled by the PC (see the Racktop Software section for more details).

Audio Ltd. has probably got the best name in the industry, the audio quality delivered by the 2040 system does not disappoint. With a 24Mhz switching band, enough information is squeezed down each channel to ensure a high fidelity signal with increased reliability and consistency. By using high quality components throughout the design, like the Sowter transformers on each output, Audio Ltd. has managed to deliver a fantastic sounding system.

Of course, the antenna you choose to use and the way in which you set up any radio system will affect performance and range, but with a little advice from the user manual (supplied on a CD) even the novice should have a rock solid system in no time.

The review system was delivered with two dipole antennas fixed to a clamp, and two of the standard 'whip' varieties.

The audio outputs are provided on gold plated XLR connectors, each one being transformer balanced and adjustable from line level down to mic level.

MiniTX Beltpack Transmitter

This very compact 'pocket' transmitter is about the size of a credit card, with enough thickness for two 1.5v AAA cells. The belt-clip can be removed by sliding it off the pack, leaving a smooth oval rectangle that sits in the provided cloth pouch and is very comfortable to wear. This box of tricks is very light, and much easier to conceal than previous systems. The best thing about it has to be the talent friendly remote control, which means you don't have to handle the unit until a change of batteries is required.

At the top of the pack, you find a smooth 'dome' ►

with recessed connectors for the antenna (SMA connector) and microphone (LEMO connector). The dome conceals some LEDs and infra-red ports for the remote control, which is the only way to adjust pack settings. There are really two different types of remote control; the infra-red version is like a car alarm key fob with four buttons to navigate through each menu, while Control-X uses magnetic induction (like a hearing aid) to transmit through clothing and switch transmitters on or off, and display other information like frequency.

The battery compartment is hidden under the end of the pack, which pivots in the middle like a swinging bridge to reveal the two AAA cells. On the 'body' side of the pack, the clear graphics tell you not only how to insert the power cells, but also sports a proud "Made in the UK" statement.

OK, so all the tools are here for a great way to deal with wireless mics on set. The transmitter pack can be fitted with fresh cells, programmed with the controller and given out to the talent. If further tinkering is required, there is no need to remove the pack and start poking about with a ball point pen, simply zap it with a remote – after all, we've been doing it to our televisions for years. It's a great idea, eliminating bulk, cost, and lots of buttons for people to fiddle with. There is no need to lock the pack, as the only way to turn it off locally is to remove the microphone plug.

Setting the frequency took a little time to get used to, the remote tended to work from one angle only, and a distance of about 20-30cm in a 'line of sight' arrangement. The IR beam is very narrow, I found you must aim the remote exactly at the pack you wish to adjust, pointing down the antenna towards the IR sensor. After a while you can be quite precise with the remote and you get used to where it needs to be.

Racktop Software

The supplied software, 'Racktop', can monitor the system with clear understated graphics, edit settings, and provides some well designed tools to get the job done without fuss.

Opening up the racktop software is easy, but you do have to connect to active units before they will appear on the screen. Connecting to the unit(s) is a little bit involved, as you need to have a Windows computer and various adaptors to end up with RS485 on a 9-pin D-sub connector. It would seem the reason for this is the long range. You can communicate with a rack (or racks) up to 1,000m away, and that's a big film set. I would still like to see a USB socket on the rack though, as not everyone needs to be so far away, and the extra cables and adaptors are bulky enough to be awkward.

Once you are able to see the rack(s) in the software, you are in business. I first tried using a Powerbook G4 and virtual Windows – no joy, but the desktop PC worked first time. I needed a USB-RS232 adaptor followed by a RS232-RS485 adaptor to make it all work.

The dynamic display is the default, and provides information about each receiver name, RF, and audio levels. Once you have connected a rack it is a snitch to see all the levels and details like a name for each user.

Advanced features include a 'scan channels' graph with the 32 frequencies of the system along the horizontal, while signal strength is indicated vertically. If a transmitter is detected a bar will indicate the currently tuned frequency, and if the transmitter power is on or off. Using a matrix like grid of checkboxes, you can choose any receiver and log the audio level and RF level into a time stamped CSV file, viewable in spreadsheet software like Excel.

Being able to scan the radio spectrum for 'gaps' is used extensively in the live sound industry, with the help of a computer this is now easy on location too – by using the infrastructure of the 2040 system a compatible frequency set can be constructed from the installed frequencies.

RF

To ensure stable reception from the transmitters, the receivers employ true diversity reception. The RF is constantly monitored in each receiver and the audio is switched noiselessly to eliminate drop-outs.

There are 32 pre-programmed frequencies to choose from; the supplied kit operated between 838.100 and 861.750, but just about anything can be ordered in line with local regulations.

2040 Range

The HX2040 is a handheld transmitter. Through a very classy relationship with schoeps microphones, the microphone can accept any of the 20 capsules from the 'colette' range, regarded for their transparent audio response and fine detail by many engineers. Slick features include an infra-red control interface, integrated pop shield, shock-mount, and just one button labelled 'on'. The single 1.5v AA power cell is enclosed inside the tailpiece, once you close this up it also acts as the antenna. The review kit did not include the HX2040 but if the build quality of the other units is anything to go by then it should be good with solid features.

The TX2040 is a more standard sized transmitter already used for wireless audio. The design incorporates the latest advanced technology to enhance multi-channel operation with a switching bandwidth of up to 24MHz and 32 pre-programmed frequencies.

The DX2040 portable true diversity receiver has Audio's unique infra-red interface allowing the user to set all parameters via the SwitchiR, a keyfob-sized remote control unit.

The receiver can be internally powered from two 1.5V, AA (LR6) type batteries giving up to five hours use on good quality alkaline batteries (longer using lithium type), and externally powered (with a supply range of 6-18V DC) using cables available from Audio and mounted on a camera easily.

A standard six pin Lemo connector interface means existing cables can be used, and the receiver is fully backwards compatible with Audio's older RMS2020 and RMS2000 ranges.

INFORMATION

£ GB£2,950.00-5,750.00 (exc.VAT, spec dependent), miniTX Transmitter £995.00

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SIMON ALLEN closes the lid on Earthworks' piano mic system to achieve the right notes.

EARTHWORKS PM40

HIGH DEFINITION PIANOMIC SYSTEM

I have had the privilege of working with many professional pianists in both studio and live performance situations. I have found that to achieve the ideal grand piano sound it has been necessary to experiment with various microphones in a number of different placements. In the studio, where time isn't as limited, there is more opportunity to try different options to suit the track you're working on as opposed to a live situation where it is very hard to get a consistently great sound from an acoustic piano without incurring feedback and mic separation issues.

Earthworks have listened to engineers and developed this single purpose system to mic a piano for churches, performing arts centres, and recording studios.

Overview

The PianoMic System mounts inside the piano across the strings, behind the hammers. The microphones are supported by a telescopic bar that sits on both sides of the piano case resulting in no mic stands being on view, this also allows the lid to be shut if desired. The whole unit is very light-weight, weighing only 350g, but is very strong and versatile. The telescopic bar is adjustable at both ends allowing a bias to either the higher or lower keys, and when fully extended will reach 64" enabling it to fit all grand pianos.

The two high definition, omni-directional microphones are mounted on the bar with flexible stems giving you an incredible amount of positioning from what appears to be a very specifically placed rig. The microphones themselves are a continuation of the Earthworks well-established High Definition mic range with an incredible frequency response of 9Hz-40kHz and a high SPL of 148db.

The connections from the microphones are neatly laid inside the telescopic bar appearing at one end with a cable utilising a 5-pin XLR connection. Included with the mic rig, in its rather nice flight case, is a box containing low distortion electronics to split the 5-pin XLR into two standard XLR connections.

Operation

The rig comes out of the flight case almost ready to go. You simply extend the bar to fit the piano and position the mics three inches away from the hammers and three inches above the strings, as Earthworks suggests for a good starting point. The cable can be easily hidden behind the piano and the splitter box can either be mounted on a short mic stand next to the piano or strapped to the piano leg in a neat leather pouch. Connect your two XLR cables, apply phantom power, and off you go.

This layout has all been thought through very well, as it's very adaptable and more versatile than I had first imagined. Everything is all out of sight, which makes it ideal for filming and concert applications. It also permits you to close the lid or to have the lid on either half or quarter stick. By closing the lid it dramatically increases the separation from other instruments or any monitoring in a live situation, or when recording ensembles.

In Use

As you are probably wondering like I first did, when I saw the PM40 it was hard to believe you could get such a good result from miking a piano inside so close to the strings. Conventional miking techniques suggest a piano is best miked from outside. I have played with other mics in and around the piano and usually find a 'nasty mush' in the mid range, but the PM40 even with the lid closed delivers excellent clarity. The quality of the sound coming across the PA was very impressive, but better still the sound of the mics in the studio environment was very controlled and clear without the use of any processing. I was also very impressed that the complete note range of the piano could be heard evenly. You may think that there would be a rise and fall in the attenuation of the notes as the pianist plays up to and away from the mics, but this was not the case.

The sound of the piano with the lid closed is a little more boxy as you would expect, but is still very acceptable and in some cases more desirable. We had the lid open whilst testing the Yamaha C6 grand piano at High Barn (www.high-barn.com) and I tried raising the mics as high as the stems would allow and noticed the natural reverberation of the room was audible. When the lid was closed and the mics were close to the hammers, the PM40 gave us a very clear bright rock-piano sound, which fitted comfortably in a mix for a rhythm and blues band performing at the venue.

The gain before feedback level of the PM40 is much higher than anything I have ever used on the stage. However, the mics have such a low frequency response to try and capture as much of the image as possible from the piano soundboard that it's the low frequencies that feed back first. I can't help but feel that by being able to change the frequency response and/or the polar patterns with various price options, the unit would be more sustainable in the live sound industry. To get the piano at the level we needed I had to compromise on the lower end of the EQ. However in my opinion, it did sound great in the studio and is better than anything else I've used for live recording.

Conclusion

This is something we've all been waiting for. Earthworks has done an incredible job and for those that are always needing to mic an acoustic grand piano, I believe this is the solution you need. The clarity and versatility of the PM40 is second to none and will surprise the most experienced of engineers. The only thing I would urge you to consider is the price.

INFORMATION

£ GB£2,345.00 (exc.VAT)

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THE REVIEWER

SIMON ALLEN is Stage and Studio Manager of High Barn.

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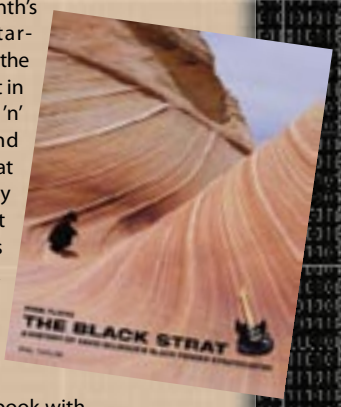
GUITAR FILE 1.2: BackIN/Black



Continuing last month's File Server's guitar-based theme, such is the far-reaching interest in the definitive rock 'n' roll instrument and its iconic players that the life of legendary Pink Floyd guitarist David Gilmour's favourite black Fender Stratocaster has been duly documented from 1970 to the present day in a dedicated book with the make-no-mistake-about-what-this-book-is-about-style title of *The Black Strat: A History Of David Gilmour's Black Fender Stratocaster* written by Phil Taylor, Gilmour's personal guitar technician – the band's only full-time backline crew member since 1974, responsible for its guitars, keyboards, bass and drums. A riveting read... for those with a need to know (more).

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Welcome

Welcome to Monitors 2008, an overview of the professional studio monitor market for the production professional.

This magazine is a collection of promotional articles looking at 10 of the world's leading monitor manufacturers and their product ranges. Inside you'll find the stories behind the drivers – the ethos' and design ethics that go into producing the one component in your studio that actually brings sound out from the boxes and widgets, and into the air – and details of the products themselves.

Monitoring provokes much debate, much passion, and possibly more subjective wrangling than any other node in the signal chain. Whether it's the box, the magnetics, the materials, the electronics, or the room that makes the difference, the term 'reference' is never used lightly amongst those who rely on hi-fidelity, accurate and natural voicing, spot-on transients, and a little 'something' extra. That something makes the difference between just another monitor, and a reference that many pros remain loyal to and rely upon for entire careers.

Hopefully this guide will provide a good foundation for your monitor buying homework during 2008, and push back the boundaries of your considerations. To complement the profiles, we've included two articles from respected names which should prove interesting, useful, and even thought-provoking. And to finish off, there's a big directory studio monitor manufacturers to further augment your options.

This guide is a collaboration between several NewBay Media titles – Audio Media Worldwide (www.audiomedia.com), Pro Audio Review (proaudioreview.com), Radio World International (www.rwonline.com), TV Technology (www.tvtechnology.com), and Broadcast & Production (www.broadcast.it). All of these publications concern themselves with the business of production, and production technology for professional creatives, operators, technicians, and engineers everywhere. Visit their respective websites to find out more.

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Monitoring Essentials

Simon Tillbrook interviews Nick Whitaker, acoustic consultant, for those invaluable tips and tricks of the trade to get the very best from your monitors.

Sitting there in front of you, and possibly behind you as well, are those boxes projecting your work towards you and upon which you make every critical sonic judgment. But how much do you really know about them? Are they suitable for your application? Are they positioned correctly? The questions mount up pretty quickly when you focus upon them so, with this in mind, I had a chat to a man who knows a great deal more than I do about these issues,
Nick Whitaker.

Nick Whitaker has been an independent acoustic consultant since 1988.
Graduating from Salford University with a BSc (Hons) degree in Electro-acoustics in 1984, he was initially employed with Racal Acoustics Ltd as a graduate acoustic design engineer specialising in the design and manufacturing of electro-acoustic devices. In 1985, he joined Munro Associates as an acoustic consultant/ speaker design engineer, specialising in the implementation of the TEF10 audio analysis system, and development of the Klark Teknik and Dynaudio based studio monitoring systems.

The consultancy still specialises in the use of the TEF audio analysis systems – now in the versions TEF20 and TEF25 dual channel systems, capable of both Time Delay Spectrometry (TDS) and Maximum Length Sequence (MLS) acoustic analysis.

From 1987-2002, Nick Whitaker electro-acoustics was associated with, and provided exclusive acoustic design services to, Recording Architecture Ltd (design practice) & Black Box Ltd (acoustic finishing products), collectively known as the RA/AAA Design Group.

For the purpose of this general look at monitors we are going to focus on those monitor speakers that dominate in rooms for virtually all audio-only and audio-visual applications; the small nearfield monitor loudspeaker.

I started by asking if there were any common mistakes or generic design aspects to monitors: "All the small generic type of small nearfield monitors have a built in high pass filter designed to protect the bass unit from over exertion," He explained. "This is often set at around 50Hz with an 18dB/Oct slope, and this can lead to low frequency balancing problems if you are unaware your speakers are removing this part of the spectrum,"

"When people are choosing monitors, it is surprising how many buy based on the initial reaction to them. These units seduce people as they are drawn to the bass, when they should really be spending more time with them and focusing on overall clarity."

More Design

Continuing with the issue of clarity, for the majority of applications it is the midrange content that dominates and is most critical when it comes to clarity. "The simple matter is that, as the bass driver gets bigger, the midrange starts to suffer as a direct result of the distortion created," says Whitaker.

When it comes to the bass driver, there are two basic types of design: "You can have a long voice coil in a short magnetic gap – this is the cheaper way of doing it, and this design allows for more power to be applied to the voice coil – or a short voice coil in a long and powerful magnetic gap.

"Within the main area of the magnetic gap, the magnetic lines of flux are linear, and as you get towards the edge of the gap the lines of flux become more and more non-linear. If you have a small voice coil moving in and out of a long magnetic gap the voice coil stays within the linear region of the magnetic flux, but with a long voice coil in a short magnetic gap there is a greater deal of movement within the non-linear area of the magnetic field, thus producing a greater degree of distortion."

According to Whitaker, the effect on the distortion figures between the two designs, across the frequency spectrum, at all volume levels is quite dramatic: "The bass driver will add in greater degrees of midrange harmonics as the driver distortion increases, and this in turn masks the midrange delivery of the monitor causing the clarity to suffer."

Environmental Effects

Obviously there are many room acoustic issues that have a direct effect on monitor delivery, even with close nearfield monitors, but what are the main issues affecting us in today's studios? Whitaker: "Even though digital control equipment gets smaller, there seems to be an insistence that the desk they are mounted on gets flatter and bigger. So you often end up with a pair of speakers set six inches above a large flat reflective surface."

This is not the only problem: "Also the screens are an increasing problem. With flat screens getting cheaper and bigger and, depending on the type of facility, you will see anything from two to four large screens in front of, and obscuring, the monitors. For the time being, with current screen technology, I can't really see any way around this problem."

When it comes to different studio environments such as post, broadcast and music Whitaker only really sees one basic difference in monitoring as he explains: "All studio monitor situations are basically analytical. Whether you are in a post room,

broadcast facility, or music studio, the majority of the time is spent critically listening, and the requirements for that are pretty much the same. The only arena where there is a difference, it seems, is in music facilities where there is a requirement to create an environment where people need to 'get off' on the sound rather than it be about great clarity. The only monitor I can see that managed to straddle those two requirements of critical and creative listening is the Yamaha NS10."

Stands

What your monitors are sitting on is very important indeed, "In an ideal world, the speakers would be rigidly set on a concrete plinth one hundred feet into the ground, but we need to look at more practical solutions." He continues: "The next best thing is to increase the inertia of the speaker cone, and attempt to isolate it from the studio or console surface, that's where the acoustic isolation, spongy stuff comes in. The idea is to make sure there is as much resistance as possible to the woofer movement to maximise delivery.

"As with speaker cables, the choice of stand has an impact on the sound. You need stability primarily. But don't go too crazy – like cables it gets to the point where gain is simply outweighed by cost."

Position

A slight continuation with the discussion on stands is where we begin the issue of monitor position, "Placing speakers on a heavy meterbridge like an SSL 4000 for example, or a heavy speaker stand, will create a loading effect that creates a low frequency boost," says Whitaker. "You can get caught out if moved from here as there will be a dramatic change in low frequency delivery and apparent midrange clarity, but not all meterbridges are as solid as they look, and if you have a void under your speaker, or simply a flimsy build quality, then that can make things much worse."

Some position issues are just common sense: "Get the monitor away from flat surfaces, and position them as symmetrically as is practical. Then spend some time moving them by tiny amounts, playing material you are familiar with.
A movement of a few inches can make an enormous difference. You will need to experiment a bit."

Height is an area where care needs to be taken as Whitaker explains: "Ideally, you want the speaker height to be odd multiples of the room dimensions, and not tilted down, reflecting off the console surface as is so often the case with inappropriately positioned stands. If a stand is being used then remember that stability will be affected if the footprint of the stand is too small. A slight increase in height will require a more substantial footprint to maintain stability."

Surround

And so to the can of worms that is surround monitor positioning. "Room size is a big issue here. We need to get the monitors away from each other so low frequencies are not too affected. A nice seven by seven meter room would be great, and then there is the problem of the centre speaker."

Good spacing on the three main matched monitors in the front is important as the main sound stage. Whitaker: "Correlation between the front three monitors and the rear depends on application. In most post and broadcast situations, the soundstage is set with the front three-way stereo and ambient to the rear."

Moving onto the LFE/subwoofer, there are many rooms where the sub is placed wherever is convenient rather than having any plan to it. "The LFE/Sub wants to be centrally placed, and a bass management system really needs to be part of the surround monitor system to give an accurate idea of balance between all the channels," says Whitaker.

There are a number of guidelines for rear/surround monitor position with particular reference to the angle relative to listening position. "Most look to an angle of 110 degrees, but there is scope here. If you position for a particular sweet point, as soon as you lean back they are out of alignment. You need the rear monitors a good distance from the front channel monitors, but do not be too specific with the rear angle. There is some variation here."

Help Is At Hand

So after imparting all this useful information, why would you need to employ an acoustic consultant like Nick Whitaker? He, of course, has an answer: "Commercial rooms generally need some degree of acoustic treatment, and I can help to spec that and the appropriate monitor options and position relative to application. Having the correct measuring equipment and the experience to go with it will, of course, help.

"The principal difference between post, music, and broadcast facilities comes with the way this acoustic treatment is presented, and so the cost of finishing can be dramatic. The raw acoustic material costs will be similar, but to gain a corporate feel can require custom construction and then the costs mount up. I am able to present a number of options and costing for a client to make a decision, and work with interior designers to make sure that the acoustic do not suffer for show."

We have really just taken a high-level view of the issues that surround monitor loudspeakers in today's audio industries. After my conversation with Nick, it became very clear to me just how critical and complex this subject area is, and we could delve into any of the areas we have looked at in considerably more depth.

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Ears Right?

Dave Foister challenges some common assumptions about how we 'hear' our music, and asks why our experiences of sound can be so very different.

A few years ago, a reputable mastering engineer went on record in a magazine article stating that he usually found it difficult to tell the difference between mono and stereo just by listening. Admittedly, his business apparently suffered after this startling revelation, but that doesn't alter the fact that he'd been doing a perfectly good job for several years. He had worked on a project of mine, and I'd happily have used him again. But what it did highlight is how widely our perceptions of what we're hearing can vary, and how wrong our assumptions about what matters can be.

DigiDesign RM2

Of course there's nothing new in the idea that appreciation of recorded sound and audio equipment is very much a subjective thing. You can measure all you like, but informed, experienced grown-ups will still come to blows over which technology, which technique, which piece of kit is 'better'. As much as anything else, this is true of loudspeakers.

In 1996 the AES published a paper, AES20, drawing up a standard for listening tests on loudspeakers. In its acknowledgment of all the pitfalls of assessing equipment just by listening to it, and in its attempt to eliminate the variables and establish a framework for consistent and fair tests, it is a brave document. Most of us will never have the time or resources to carry out its recommendations to the letter, but it's hard to deny the force of its arguments and premises. But revisiting it the other day, I was struck by some of the things it regarded as problems, and some of the assumptions contained in it, and I was reminded of the aforementioned hapless mastering engineer's innocent but damning admission.

Balanced Opinion

I have a problem with some of the assumptions that generally seem to be made about how we hear loudspeakers. I don't claim to have Golden Ears by any means, but some of the aspects of loudspeaker listening that are supposed to be problematic don't seem to bother me, and I'd like to know if others feel the same. I don't get it when people sit in the sweet spot and can't localise instruments in the stereo image, even on rubbish loudspeakers. It doesn't seem to matter whether it's multi-miked or purist, unless something's hard left or right they just can't place it. I don't get it when people can't hear the stereo image at all if they move off-centre; it sometimes seems as though only a foot off to the left, they stop hearing anything coming out of the right-hand box. It doesn't seem hard to me to compensate for where I am and hear everything where it should be, even if I'm right off to one side – not with as much precision perhaps, but it's all still there. With all due respect to our mastering engineer, I don't get it when people can't tell the difference between stereo and mono; to me, mono is like listening through a crack in the door, and stereo is what you get when you fling the doors wide open and march into the room.

Un-Phased

But most of all, I really REALLY don't get it when people can stand in front of (or in fact anywhere near) a pair of out-of-phase speakers and not be aware there's anything wrong. It's bad enough in a friend's living room, where perhaps a pair of untrained ears can be forgiven for not noticing that there's no bass, not even a vague idea of where anything's supposed to be, and above all an agonising feeling that your eardrums are being sucked out of the sides of your head, there's a paint-stirrer in your brain, and last night's dodgy curry is about to wreak its havoc.

It's also possible to recognise that the shelf-stackers in a record store are immune to similar feelings as they wander around the aisles of CDs between speakers that were apparently installed by a colour-blind orang-utan. The fact that some of us can't stand to spend more than a few seconds in those particularly sour spots would be a complete mystery to them; the fact that it loses them sales, as potential customers run gagging from the shop, should bother them, but clearly doesn't. Likewise the home electronics stores, but I suppose that shouldn't be a surprise; if they can cheerfully display a whole wall of TVs where no two pictures are even slightly similar, then the proudly-displayed stereo with its speakers wired in opposite polarity isn't going to phase them at all.

But when people who consider themselves to be audio people don't notice, I have to wonder what exactly we're all

experiencing as those little variations in air pressure hit our auditory canals. I once went into a control room that had recently been completed and was being shown to me by its proud designers and installers. To be fair, it was a DIY job, but an expensive one by people who claimed to know what they were doing. You know what's coming: as soon as the first millivolts hit the drivers I wanted to run screaming from the room, pausing only to collect a sick bag. They had been working in there since the room was finished, with the monitors wired in opposite polarity, and hadn't noticed. When I put it right, as I felt duty-bound to do in as diplomatic a way as I could muster, they acknowledged that it sounded better but couldn't put their fingers on why, and pronounced the difference to be 'subtle' and something that only an experienced engineer like myself would notice. Is this true? Seriously, write in and tell me.

Back To School

But there's worse to come. I subsequently participated in a seminar about audio training, where I raised the idea that there are audio people and non-audio people, just as there are people who are musically talented and those who are not. Most of the audio people I know began by messing about with sound equipment at an early age; my dad bought a tape recorder when I was eight and I was soon trying to break it, finding out that it worked by electricity by connecting a light bulb to its speaker output and watching it flash, and experimenting with the rubbish sound-on-sound system that did nothing more than turn the erase head off. Sad and nerdy I know, but it got me where I am today and I suspect the same is true for many an audio professional. I suggested that it was no more possible to teach somebody to be an audio pro from scratch at college than it was to train somebody to be a professional musician in the same time; there had to be a natural aptitude and a long-standing enthusiastic involvement for it to work. To demonstrate my point about those who've got it and those who haven't, I related the above story about the out-of-phase monitors, suggesting that an inability to discern the difference should mark someone down as not cut out to be in pro audio and rule out the possibility of ever working in it. To my astonishment, a senior guy from a well-known training organisation dismissed what I was saying by commenting "well maybe they liked their monitors out of phase". To me (and I suspect to many others in the room) that kind of proved the point, and damaged permanently my regard for that particular training organisation.

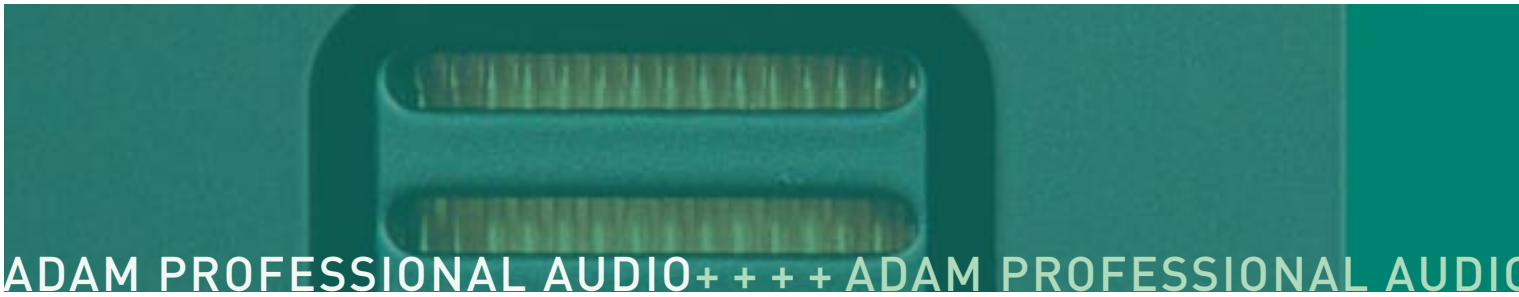
Genelec 8240A

But, worryingly (there is a point here, honest), AES20 recommends, early in its guidelines, using test tones to establish whether the speakers under test are correctly wired in phase. Feeling, as I do, that it's no more possible to miss out-of-phase speakers than to miss a giraffe walking into the room, I would regard this as completely unnecessary; but if the august AES members who drew up the standard feel it to be important, I have to wonder whether my sensitivity to the phenomenon is unusual. Another example shows what I mean: years ago I was at an Ambisonics seminar and demonstration at a top studio, attended by some of the industry grandees. When it came to the demo, on a system that had clearly been carefully set up and checked by the people presenting the day, some of us felt uneasy; this wasn't delivering what we knew an Ambisonic playback system could. Eventually one person was brave enough to stand up and say so; we were hurriedly offered a cup of coffee and the system was taken apart and checked. It transpired that of the four identical speakers chosen for the demo, one of them had one of its drives wired back to front. That was enough, for several of us, to wreck the reproduced image, while for others it apparently made no difference. Remember that these were all experienced audio pros.

Dynaudio BM12A

Discuss...

The fact that some people like certain colour combinations that others consider to clash, and that Marmite can revel in the polarisation it causes, suggests that in every sensory area our systems are probably conveying completely different impressions to us. If this is true of hearing, then it makes the whole subject of monitoring even more of a subjective quagmire than it already is. If we all hear such different things, if we are all sensitive to different aspects of sound, then the trade-offs and compromises inherent in loudspeaker design will have different impacts on different people. We take it as a given that there's no such thing as a perfect transducer, and that engineering a loudspeaker simply means making the best fist of it that one can among the minefield of interacting variables; it seems to me possible that improving one aspect at the expense of another will make a speaker sound 'better' to one person and 'worse' to another.



A Work of ART

Due to several technical inventions at the heart of the matter – the Accelerating Ribbon Technology (ART) being the most famous one – the products of the Berlin based company have instantaneously proved to be amongst the best tools available in professional monitoring.

Groundbreaking innovation in electro-acoustic transducers, painstaking design and superior materials are the cornerstone of ADAM technology – but what sets these monitors apart is the breathtaking realism of the sonic images they reproduce.

To an engineer, this new level of perception results in a mix with true imaging and depth, that is fully transportable across the complete range of listener music systems.

State of the ART!

Corner stone of the unprecedented audio fidelity are the innovative folded ribbon mid and high frequency drivers. All previous non voice coil based driver designs have exhibited technical shortcomings such as very little impedance (ribbons), bad dispersion (electrostatics), low efficiency (magnetostrictive tweeters) and so forth. Overcoming the problems of conventional driver designs is exactly what the ADAM ART (Accelerating Ribbon Technology) tweeters and midrange units successfully do. They take a completely new approach to the kinematics of moving air, resulting in a dramatic improvement in the quality of audio reproduction.

When only the best will do

A small selection of ADAM users:
Elliot Scheiner, Chuck Ainlay, Bernie Kirsh, Danny Elfman, Dennis Sands, Kevin Killen, David Schiffman, Thom Russo, Timothy B. Schmitt, Scott Spock/The Matrix

A small selection of studios using ADAM:
Abbey Road, 20th Century Fox Digital, Paramount, Jazz At Lincoln Center, Blackbird Studios, Masterfonics, Circle House, Soundelux, The Juilliard School, The Lodge, Mozarteum Salzburg

Construction

The ART membrane consists of a pleated diaphragm in which the folds compress or expand according to the audio signal applied to them. The result is that air is drawn in and squeezed out, like the bellows of an accordion.

Velocity Transformation

Whereas all other loudspeaker drive units act like a piston, moving air in a 1:1 ratio with regard to the motion of the driver, the ADAM ART design achieves an improvement in air loading by a factor of four over conventional transducers. This markedly superior 'motor' is responsible for the unprecedented clarity and pristine transient reproduction that can be heard with the ADAM ART drive units.

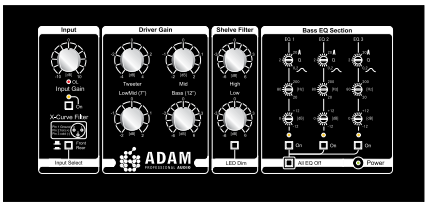
The Woofers. In-Depth Depth...

To match the unique clarity and precision of the ART tweeter and midrange: That is the challenge of the ADAM woofers. They are designed to reproduce the given sound material with the highest possible authenticity, guaranteeing ideal translation to the widest range of systems and environments.

HexaCone™, as used in ADAM's S-Series, proved to be the preeminent materials to meet that requirement. The core is a honeycomb Nomex™ structure that makes them both extremely light and very stiff. The front and back of the cone have been coated with Kevlar™, one of the most advanced synthetic fibers available. Kevlar™ withstands elongation by a force factor greater than 1000 times that of steel, enabling the cone to resist deformation. HexaCone™ woofers are far more rigid than paper, polypropylene or aluminum devices of similar dimensions. Due to this rigidity, break up resonances in the diaphragm cone are prevented.

Control Panels. Trust is Good, Control...

Even the very best loudspeakers inevitably face the problem of always varying room acoustics, of room modes and different early reflections. To counteract this problem as efficiently as possible, every ADAM monitor and subwoofer features numerous controls to guarantee optimum performance under the prevailing acoustic circumstances. Because trust is good, control is better.



Control Panel S6A Mk2

As You Like It: The ADAM Product Series

Whether for small home applications or professional environments, in mobile facilities or large studios, for recording, mixing and mastering: the great variety of ADAM monitors provides the perfect tool for any application and environment in professional audio.

The series range from high-value basic models (A-Series) through mid-priced monitors well suited for many applications (P-Series) to high-end models for all kinds of professional music recording and reproduction (S-Series). All monitors can be perfectly supplemented by six different subwoofers.

A7: "The Truth and Nothing but the Truth."

The A7 is an active two way nearfield monitor matching the ART tweeter with a state of the art 6.5" woofer that introduces a new cone material (Rohacell/carbon fiber) which combines high rigidity and high internal damping with low weight, resulting in an extremely accurate monitor

with all the clarity, detail and spectacular imaging traditionally associated with the ADAM name.
The A7 is powered by two 50 W amplifiers (one per driver).
The front panel sports both a power switch and volume control, while the rear panel houses controls for tweeter level and two shelving filters for high and low frequencies.

ADAM A7

The unit also features both balanced (XLR) and unbalanced (RCA) input connectors, allowing it to be used in almost any audio application.

Well over a dozen different magazines have tested the A7 and every single test was nothing but a paean of praise. "The very good tuning causes a tonal balance and precision in all details that usually can hardly be found" Professional Audio, Germany, outlines (10/2006). Moreover, the A7 has received the m.i.p.a Award and been nominated for the TEC Award 2007.

S3A: "A Precision Hardly Known Before"

The renowned three-way S3A utilises the ART tweeter to produce a wonderfully open sound field and flawless transients up to 35kHz. One of the two 7" HexaCone™ drivers acts as a mid-bass driver with the second woofer joining it only below 150Hz. This unusual approach effectively doubles the area and power of the woofer when it needs to respond to deeper frequencies, resulting in an exceptionally deep and punchy low end without compromising midrange performance. Three 150 Watt amplifiers in each monitor deliver outstanding dynamic performance and surprising amounts of SPL. S3As can be oriented either horizontally or vertically to fit the needs of your studio, and can be used in stereo as well as surround applications.

The multiple award-winning S3A can be found in many of the best audio recording and production rooms around the world, including professional recording studios, broadcast facilities, educational institutions, major film-scoring rooms and stages, and is widely hailed as one of the finest nearfield monitors available at any price.

A wealth of tests proves the outstanding qualities of these monitors. Tape Op (02, 03/2003) applauds: "What I heard amazed me.[...] The S3A is the best nearfield or midfield monitor that I have ever heard." And EQ Magazine concludes: "I would suggest to anybody in the market for new midfield monitors that they give the S3As a shot. Their reputation as being one of the best is well deserved." (05/2006, "In Praise of... The ADAM S3A!")

ADAM S3A

ADAM S7A

S7A Mk2: Power and Accuracy

With the S7A Mk2 we proudly present a unique combination of ADAM's proprietary transducer technology, modern PWM amplifier design, a highly sophisticated control panel, and an advanced d'Appolito speaker alignment, that result in a main monitor meant to analyse the details of every kind of music to a degree not known so far. It features a whopping 1500 W of onboard power (rms), reaching peaks of about 128dB (1m), two 15" subwoofers, two 9" HexaCone™-midwoofers, two ART midrange units and one ART tweeter.

The S7A Mk2 is the benchmark of what is possible in state of the art full range active professional monitoring, today. It incorporates all of the ADAM inventions and designs, as well as the best materials. This fusion of power and capacity with precision and accuracy results in unparalleled performance in professional monitoring.

The proof is in the listening – we encourage you to hear for yourself.

ART at a glance:

- **Velocity transformation 4:1 (the air moves four times faster than dome or ribbon tweeters)**
- **High efficiency (approximately 92 dB/W/m)**
- **Perfectly linear impedance (3.2 ± 0.03)**
- **Extremely flat phase response (within ± 1.5°)**
- **Excellent directivity characteristics**
- **Power handling capacity up to three times that of 1" domes**
- **Perfect magnetic shielding**

"The ADAM's highs had a kind of 'this is the instrument, not a reproduction of the instrument sound' that appealed to me instantly." **(EQ Magazine, 10/2006)**
"By employing the ART technology for the reproduction of the middle and high frequencies, the manufacturer from Berlin has set himself worldwide at the forefront of what is possible in highest quality reproduction." **(HardBeat 06/2007)**

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Digidesign Reference Monitor Series Speakers

When it comes to high-quality sound, Digidesign strives to create products that deliver the absolute best. To further ensure that you get the best-sounding audio possible in your creative endeavours, Digidesign now looks to redefine how you monitor your mixes with the Digidesign® Reference Monitor Series.

High-Definition Sound – Revealed

Digidesign revolutionised the professional recording industry with its Pro Tools® digital audio workstation. And for over 20 years, Digidesign has developed groundbreaking technologies and tools that have energised audio professionals and garnered hundreds of industry accolades, including Grammy® and Oscar® awards for technical achievement.

But above all, Digidesign's goal is to continuously innovate and deliver products that sustain the highest audio quality possible. Its recording and mixing systems boast unrivalled sound quality with 24-bit/192kHz audio resolution. Its Pro Tools architecture features a true, fixed-point, 48-bit mixer that yields nearly 300dB of dynamic range. And many of its high-quality plug-ins provide double-precision processing for the ultimate in dynamic range and headroom.

To reinforce its objective for pure, high-definition audio, Digidesign makes its foray into the loudspeaker market with the Digidesign® Reference Monitor Series (RMS), offering two professional near-field monitors – the RM1™ and RM2™ – co-developed with PMC, the Professional Monitor Company.

RM1 and RM2 provide various inputs and controls on the back – here's a look at these on RM2 (RM1 is identical).

Engineered With PMC – The Professional Monitor Company

Based in the United Kingdom, PMC is a world-leading manufacturer of professional monitor and audiophile speaker systems. Its Advanced Transmission Line (ATL™) technology delivers high-resolution, wide-bandwidth signal response and accurate low-frequency response without distortion.

Partnering with PMC was a logical choice for Digidesign, as both companies have spent their entire histories developing and advancing pioneering audio technologies that empower audio professionals to create the best-sounding audio possible. Together Digidesign and PMC strive to redefine near-field monitoring by providing the best sounding, incredibly accurate audio reference to help engineers create better mixes that ultimately translate well to any speaker system.

RM1 with 5-1/2-inch Low Frequency driver optimized for the ATL design.

RM1 And RM2: Redefining Near-Field Monitoring

The Digidesign RM1 and RM2 monitoring systems utilise PMC's ATL technology to deliver high-definition audio with unrivalled, accurate bass response. Both systems feature a revolutionary, onboard digital signal processing (DSP) engine that manages a variety of tasks, including the complex digital crossover and Bass Port Emulation mode, which emulates the frequency characteristics of a bass reflex speaker, allowing you to hear how your mix "translates" to a ported speaker.

Both monitors are designed with proprietary drivers, digital electronics, power amp, and cabinet engineering to provide unrivalled tonal accuracy, exceptionally low distortion, stunning clarity, and incredible dynamic range. And their wide sound dispersion ensures accurate frequency response even if you're listening in an off-axis position.

The compact RM1 boasts performance comparable to much larger monitors, and is the ideal monitoring system for project studios, editing suites, home studios, and mobile production vehicles. The larger RM2 features a relatively small footprint compared to the competition, but is big on power and sound quality, making it ideal for recording studios, mixing suites, post production facilities, broadcast installations, and other rooms that require a higher sound pressure level (SPL) and even lower bass extension.

Advanced Transmission Line (ATL) Technology

PMC's ATL technology has taken loudspeaker design to new levels, combining sophisticated cabinet engineering, proprietary drive unit and crossover components, and patented absorption

materials to deliver enormous benefits over sealed and ported speaker model designs. It's what enables Digidesign RMS monitors to deliver improved audio resolution with a higher sound pressure level, reduced distortion, even frequency response, and deeper, more defined bass frequencies.

Because of ATL technology, the RM1 and RM2 monitors can produce higher volumes and lower bass extension than other speaker designs of similar sizes – even if identical or larger drivers are used. The frequency response also remains consistent regardless of how high or low you adjust the volume.

Onboard DSP Engine

Both monitors feature a 48-bit, fixed-point DSP engine that manages various tasks, including the monitors' complex frequency crossover, speaker positioning EQ settings, trim level, and Bass Port Emulation setting.

The two-way, DSP-based digital crossover features revolutionary steep and pure filter designs for the cleanest crossover – with virtually zero phase shift – so that the signal delivered to the drivers is distortion- and interference-free. The crossover also allows for precision optimisation for the best possible match between the two drivers' responses and their roll-off rates. This provides seamless integration between the High Frequency and Low Frequency drivers, and superb phase response over a wider listening window.

Bass Port Emulation

RM1 and RM2 feature a Bass Port Emulation mode that enables the monitors to emulate the tonal characteristics of ported bass reflex speakers. This allows you to switch from hearing your mix as it truly sounds to hearing how it would sound on typical ported speakers, enabling you to compensate for the colouration characteristics of these types of speakers in your mix.

Analogue-Controlled, Class D Power Amplifiers

RM1 and RM2 both feature analogue-controlled Class D amplifiers that combine all of the efficiency and size advantages of digital amplifiers with the precision, control, and sound quality of audiophile linear amplifiers.

RM1 And RM2 Features

- **Professional, bi-amplified monitoring system**
- **Analogue and digital inputs (up to 24-bit/96kHz)**
- **Audiophile-grade, analogue-controlled Class D amplifiers with high-quality linear power supply units**
- **Advanced Transmission Line (ATL™) technology provides high SPL and superior bass extension**
- **1-inch soft dome, ferrofluid-cooled High Frequency driver**
- **RM1 features 5.1/2-inch Low Frequency driver optimised for the ATL design**
- **RM2 features 6-3/4-inch Low Frequency driver optimised for the ATL design**
- **Unrivalled tonal accuracy, clarity, and dynamic range with exceptionally low distortion**
- **Powerful onboard DSP engine provides:**
- **Extremely accurate digital crossover for pristine imaging**
- **Bass Port Emulation mode**
- **Precise gain trim, low- and high-frequency adjustment, and speaker placement settings**
- **Low jitter analogue-to-digital converter (ADC) with low-noise clock oscillator**
- **Sound dispersion design maintains accurate frequency response even in off-axis listening positions**

RM2 with 6-3/4-inch Low Frequency driver optimized for the ATL design.

While typical Class D amplifier designs have a load-dependant frequency response, the amplifiers in Digidesign RMS monitors feature a single feedback loop, which senses the loudspeaker voltage directly. This provides extremely accurate amplifier frequency response regardless of the reactive load presented by the drivers, enabling the monitors to deliver higher fidelity with lower distortion. And because of their unique analogue control, the monitors produce a flatter frequency response no matter what the load of the driver.

High-Quality Linear Power Supply

Digidesign RMS monitors employ a high-quality, linear power supply (instead of a noisy switch-mode design), which provides two times the peak current headroom and the best noise isolation between the audio circuitry and mains supply. Typical switch-mode power supplies are prone to producing noise and radio frequency interference (RFI), which will not only have a detrimental effect on the amplifier, but also on other sensitive equipment connected to the same power supply or in close proximity.

RM1 RM2

The Digidesign Reference Monitor Series is available through authorised Digidesign Resellers. Check www.digidesign.com for more details.

digidesign

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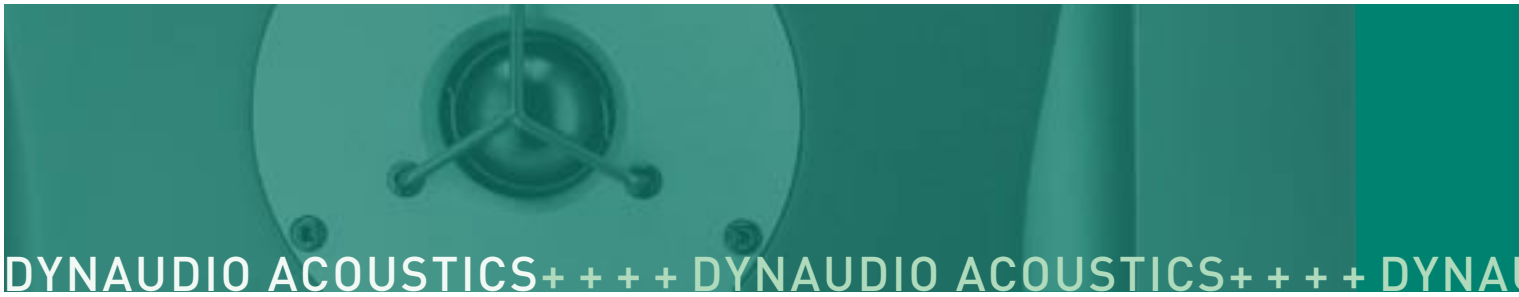
w www.digidesign.com



The Truth, The Whole Truth, And Nothing But...

Dynaudio Acoustics monitors are designed to speak the truth. You get exactly what you need for your mixing – an exact reproduction of your mix – no more, no less.

Superior Tools For Critical Monitoring

In film, post, gaming, broadcast and music productions, consistency, predictability, and reliability are key. Add to this networkability and central control, and you'll know why studios throughout the world rely on Dynaudio Acoustics technology.

Choosing Dynaudio Acoustics, you not only get 20 years of innovative speaker and driver technology thinking. You also get integrated TC Electronic digital signal processing. This combination offers you the best of both worlds, making Dynaudio Acoustics speakers second to none.

Two Main Ranges – One High Standard

Clarity and consistency come standard – the question is, how versatile do you want your setup? Dynaudio Acoustics market two extensive ranges of DSP powered and analogue near-field and mid-field monitors.

AIR 12

Powerful Two-Way Nearfield Speaker – 8" Woofer And 1.1" Soft Dome Tweeter

The latest addition to the AIR family. AIR12 suits all sizes of control room and OB vans, and its high precision amp/driver system (+/- 0.2 dB accuracy) ensures complete consistency with the entire AIR family in a variety of stereo and 5.1 setups – remote controllable via the AIR Remote or the included Air Soft application. DSP room adaption allows for perfect customisation for any room construction and its inter-monitor level calibration feature ensures consistent levels in all sessions.

AIR

It makes great sense to compare the AIR sound with any other speaker you own or consider acquiring. We both encourage and support this. Contact your dealer or our representative in your country to arrange a demo.

Bear in mind though, that an AIR System is not really comparable to conventional monitors. On top of ultimate precision and sound, an AIR system offers flexibility and convenience previously unknown in monitors. Achieving similar functionality and features from conventional monitors requires the addition of a number of external boxes such as Monitor Matrix Controller, Bass Management Crossover, external EQs and Delays. This obviously adds to the system price, and moreover often degrades the signal path. With an AIR System everything is integrated and matched – it's right there for you to use from the menu on the front of a Master-Module speaker via a 32-segment LCD display, or through an optional dedicated hardware remote, or an optional dedicated software application (Mac and PC). The user interface allows for storing and recall of factory and user presets taking into account THX and Dolby recommendations, reference levels, LFE sensitivity, etc.

AIR Soft

This MAC and PC compatible remote application allows central real-time control of AIR system parameters such as volume control, reference level, presets, and setup. AIR Soft is included with all AIR monitors.

AIR Remote

AIR Remote provides instant access to the AIR system volume, independent of your DAW or computer. Additionally, AIR Remote features one-touch operation of system reference levels, preset recall, and solo/mute status for each monitor. The calibrated volume knob of AIR Remote allows accurate level setting, perfect tracking, as well as calibrated loudness for any AIR setup. The AIR remote is powered through TC-Link of any AIR monitor.

AIR PC-IP

The optional PC compatible advanced Installer's Package provides access to virtually any AIR system parameter. This includes 4-band parametric EQ in each monitor, placement delay, preset control and more. PC-IP access to advanced bass management features independent HP/LP crossover frequencies as well as phase and polarity control of any AIR subwoofer.

Additionally, PC-IP allows the installer to control system access via individual parameter securing, preset protection, and UI locking.

Award-Winning Speaker Technology

Don't just take our word for it. Over the years, Dynaudio Acoustics monitors have won numerous prizes and awards.

BM 12A

- 2008 Remix Technology Award in the Monitor/Speaker category

BM 6A mk II

- Electronic Musician 2008 Editors' Choice Award in the Monitor Speaker category

AIR series

- Producción Audio – for Best Studio Product of the Year 2003

BM 6A

- Future Music's Gear of the Year 2001 Award
- 2007 TEC Award nomination in the Studio Monitor Technology category for Outstanding Technical Achievement
- m.i.p.a. 2003 Award in the Nearfield Studio Monitor category
- Future Music's Platinum Award 2001

Recognition like this goes to show that great products can help produce great art, as Dynaudio Acoustics monitors are used by the most demanding studios, engineers, producers, and production environments throughout the world. The list counts:

- BBC Radio & Music, London, UK
- Danish Broadcasting Corporation, Copenhagen, DK
- Vienna Symphonic Library, A
- Paragon Studio, Nashville, US
- AIR Studios, UK
- Half HP Studio, JPN
- Sony DVD Center Europe, A
- Abbey Road Studio, UK
- ESP Studio, JPN

...and many more.

THX Certified

AIR monitor systems are THX certified for use in PM3 rooms.

BM

The BM monitors – both in their passive and active forms – are clean, powerful, and accurate monitors where excellent results are easily achieved. The sound is always transparent and crisp ensuring the most realistic listening conditions for a wide array of applications. Comprised of renowned Dynaudio driver technology, these monitors have become the standard when it comes to high performance and transparency. In combination with the subwoofers, the BM series is also very well suited for multi-channel facilities.

BM 5A

Two-Way Active Nearfield Monitor - 6.9" Woofer And 1.1" Soft Dome Tweeter

The BM 5A monitor is a further development of the BM series and our engineers have put great effort into the design and fine-tuning of the BM5A, using the latest Dynaudio Acoustics technology. The monitor is extremely well suited for music monitoring and mixing, broadcasting, OB vans, edit suites, playback suites, and project studios. This high-performance monitor comes in a very compact design.

dynaudio acoustics
IF IT'S THERE - YOU'LL KNOW IT

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Digital Active Monitors

FAR has been active in digital monitoring since 2001. We have introduced our new XM range, a combination of technologies.

The XM series include high quality analogue Class D amplification with the addition of powerful **DSP** and CPU. The use of this technology allows new possibilities for easy, convenient and central control of both the audio parameters and the setup information via dedicated PC software and remote control. The networking possibilities perfectly suit today's applications, and allow for future changes.

The XM series features a sealed box bass principle design, that allows flush mounting, easy placement in the room, and a very accurate bass/low-medium reproduction.

All the filters available in the speaker are implemented in the digital domain. This guarantees perfect repeatability from speaker to speaker which will never vary with temperature, humidity or aging. The speaker system cannot be made more accurate or stable. The monitor impulse response has been optimised to guarantee the best possible dynamics and accuracy.

As most productions end up in a digital format, the FAR Active monitors allow direct monitoring of the digital signal through the AES/EBU inputs.

Some studios are still working with analogue signals for monitoring. To meet this requirement, all the FAR Active monitors have a very high quality analogue input as a standard feature.

The XM10 D by XM Range employs the CAC™ (Center Acoustic Coherence) Medium-Tweeter assembly. It virtually behaves as a point source without having the problems of a coaxial system. As all the XM speakers (XM10, XM8 and XM6) share the same medium-tweeter assembly, they all have the same sound signature. The sound engineer can switch from the smallest to the biggest model without losing the reference.

Room Acoustics Correction

The SCS control software proposes a tool that helps the optimisation of the acoustic of the listening or working room. It is possible to load in the SCS software the frequency response of the loudspeaker in its working room and to "flatten" it manually by using the 10 band parametric equaliser.

Even if this method has the advantage of leaving the full control of operations to the technician or sound engineer, it requires a certain experience to obtain an optimal result.

ATD² has developed an assistant for the optimisation which offers (but not imposes) a solution to the user. You just need to give a model in which the frequency response of the pair monitor/room must be found. The model must not necessarily be flat, even if it is in most of the cases the searched aim. Any arbitrary form is possible.

The optimiser will search the parameters of filters which lead to an optimal solution. The user can then judge the effect of each filter by using the 'off' button which is associated with it. The user can then modify the parameters of each filter if the proposed solution does not please them.

Once the satisfactory result is obtained,

Culture and Philosophy

We pride ourselves on delivering speakers that meet the performance demands of our customers. The use of a compact and symmetrically sized box, and the same mid and high frequency signature from the smallest up to the biggest monitor, requires experience and expertise. We've put all of that into the XM range to meet the highest of standards.

Thanks to our vast experience in acoustics we have been able to develop software solutions for monitors.

++FAR BY ATD²+++FAR BY ATD²+++FAR BY ATD²+++FAR BY ATD²

the user can then store it into the monitor with an appropriate name.

Loudspeaker Control System.

Besides the major functions such as the preset curves and the 10 band parametric equalizer, the **FAR Active monitor™** loudspeakers propose an environment of integrated control.

Via the FAR LINK ™ network, it is possible to control and configure up to seven loudspeakers and two subwoofers.

The tones controls (tilts and shelves) as well as the choice of source, the analogue full scale sensitivity,

the choice of digital channel, the delay applied to the loudspeaker, and the relative level, are directly accessible.

The delay and gain of each driver is accessible in the tab 'Xover Settings', in order to compensate an inclination of the loudspeaker which is not perfect with the listening position.

It is also possible with these settings to decrease the effects of the first reflection on the mixing desk. However, there is a powerful tool that an experienced user can use to expertly control the acoustics of the room.

Coming soon: ATD2 USA

In 2005 ATD² took over the FAR Active monitors business.

ATD² design, manufacture, and sell monitors under the FAR Active monitor brand in the same spirit initiated by FAR: high-end audio restitution, superior ergonomics, and excellent customer support.

ATD² takes care of the after-sales service of the speakers sold by FAR. We are pleased to invite you to visit our website at www.ATD2.com.

Technical Description

- Compact active 3-way monitor
- Multi-amplified (one amplifier per driver)
- Insensitive to GSM disturbance (fully balanced electronics)
- CAC™ medium-tweeter assembly (point source)
- Sealed box woofer load principle (no rear or front port)
- Integral signal processing achieved by DSP
- 10 band full parametric EQ
- Acoustic curve simulation
- Tilts and shelves
- Parameter control via speaker back panel, remote control or PC software

FAR Active Monitor by ATD²

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Listen to your Music, Not to your Speakers

These few words embody the philosophy of Focal Professional. It is crucial for engineers to be able to completely trust what they are hearing. Our drivers and speakers have been designed, developed and assembled in France by Focal for 30 years. Our products are made from the ground up to be professional tools that reproduce the reality of sound without enhancements or degradations.

Focal Monitoring Speakers: Specific Tools for Specific Needs

A speaker that 'reveals'

A tracking engineer needs to be able to capture the exact tone of the instrument he's recording with his microphones; he needs to discern the slightest shift in microphone position, EQ, or compression on his monitors.
A mixing engineer needs to be able to place various instruments and vocals in his mix with precision. The smallest details need to come out clearly on his monitors, i.e., reverbs and spaces, and they need to be reproduced at their proper levels without any artificial alteration of the soundstage.

A speaker that 'translates'

The mixing engineer also needs to be able to make sure that his mix sounds as good on any other speaker systems in any other environments. Usually, when a mix is done, the engineer will make a copy of it and go listen to it in a car or on a boom box, just to make sure that everything sounds the same everywhere. In essence, the engineer wants to make sure that his mix translates well everywhere it gets listened to. A completely transparent speaker, that doesn't impart a "color" to the sound, is the best way to ensure perfect mix translation.

Our Speakers 'reveal' and 'translate' better than others. Why?

Focal Professional designs its products from the ground up to fulfill the specific needs of professional sound engineers: to reproduce sound as naturally and precisely as possible. The truth, and nothing but the truth.
Our R&D labs have put all their knowledge and savvy into action to combat any colouration or distortion that could appear throughout all areas of the speaker. Even the slightest colouration can hinder the integrity of the signal's reproduction. It's easy to understand how a self vibrating speaker enclosure can blur the original signal, and the same goes for the drivers, the integrated amplifier, the padding, the finish, etc, etc.
We scrutinise each of these elements with the same care to achieve our goal of absolute transparency.

Focal manufactures its own drivers with proprietary, patented technologies

Focal is one of the rare companies that manufactures its own drivers, and has done so for thirty years. It goes without saying that these decades of accumulated experience have allowed us to optimise our drivers' performance. To this effect, Focal uses numerous unique, proprietary, and patented technologies like the "W" Cone and the Be Tweeter.

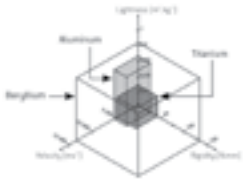
The "W" Composite Sandwich Cone

Focal has been developing composite sandwich membranes for the last 15 years. The fruit of that research, the "W" structure (glass/foam/glass) used in every Focal professional product, allows for a truly optimised response – right from the start – thanks to the precise control of rigidity, weight and damping capacity of the cone. The balance between these three fundamentals and often contradictory parameters is the very basis of the exceptional sonic neutrality of our speakers.

The Be Tweeter

Since the very beginning Focal has favored inverted dome tweeters, but the introduction of the pure Beryllium dome, capable of covering five full octaves from 1000Hz to 40kHz, has simply revolutionised high frequency spectrum reproduction. This tweeter's capacity to go as high as 40kHz without any artifacts enables it to reproduce high frequencies with unmatched speed and transparency.

At first the pure Beryllium tweeter was only available on the very high-end, digital speakers, of the Focal Professional lines (SM8 & SM11) and is now featured on the new SM6 series, allowing an unprecedented price/performance ratio.



Comparision of Beryllium with Titanium and Aluminium. Beryllium is the lightest, stiffest and has the highest velocity of sound.

The Focal Professional monitoring range

Looking for the ultimate analogue tool
The SM6 series has been developed for professional engineers who are seeking the absolute neutral sound. The SM6 line is composed of three references: Solo6 Be, Twin6 Be, and Sub6.

Solo6 Be
The Solo6 Be is an active, two-way, professional nearfield speaker (two built-in amplifiers – 150 + 100W RMS), made of a 6.5inch (16.5cm) "W" composite sandwich cone driver, and a pure Beryllium inverted dome tweeter.

Twin6 Be
The Twin6 Be is an active, three-way, professional nearfield/midfield speaker (three built-in amplifiers – 2x150 +100W RMS), made of two 6.5inch (16.5cm) "W" composite sandwich cone drivers, and a pure Beryllium inverted dome tweeter.

Sub6
The Sub6 is an active subwoofer (1x350W RMS built-in amplifier – BASH® technology) for professional monitoring sytems. The driver is an 11inch with a "W" composite sandwich cone loaded by a large section laminar port. It can be used both as LFE channel in a surround system or as a bass or sub-bass complement in a stereo system (2.1 or 2.2).

They Chose Focal...

Simon Gogerly (U2/Massive Attack/Texas)
"I have been introduced to the Focal Twin6 Be while I was there to listen to some other monitors and finally I found what I was looking for! Suddenly, I was hearing detail in my mixes that wasn't obvious before. Open and airy top end, detailed mids and plenty of punch and warmth down below, sometimes I've had to remind myself that I'm not listening to the "bigs". It's not that they're flattering either, when a mix is average that's exactly how it sounds. I was expecting to pay a small fortune for monitors like this but the added bonus is the very reasonable price. I'm looking forward to a long and successful mixing partnership with them!"

David Kutch (Alicia Keys/Outkast/Rod Stewart/Whitney Houston)
"The Focal Solo6 Be monitors simply saved my life! I could not have mastered Alicia Key's latest album without them. The Solo6 Be has a stunning amount of true sub and punchy low end for such a small speaker. The mids and top are crystal clear and distortion free, non fatiguing and not hyped in any way – and at all times, no matter where I am, they let me hear what's on the recording."

ICP Studio – Brussels
At ICP Brussels Studio B stands an SM 11 set up in front of the Neve 88R desk. ICP Studio is one of the top ten major studios in the world, known worldwide for owning one of the most amazing collection of vintage pro gears and music instruments.

In quest of the optimum solution to export the sound material from a digital console with an outstanding clarity and transparency: Discover SM11 and SM8, our professional digital monitoring systems on www.focalprofessional.com.

Complete list of distributors:
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Choosing Nearfield Monitors Should Be Easy

After all, they only have one job to do. The job of monitoring. Not enhancing, not diminishing, not in any way altering the source material.

PM Series MkII

The PM-Series MkII offer exceptional audio performance matched to jaw-dropping good looks at an affordable price. Fostex strive to design and build studio monitoring systems which enable you to experience your unique sound in all its dimensions. And through tireless research and development, endless measurements and real-world listening tests, Fostex's engineers have achieved this in the form of the beautiful second generation PM-Series.

Capitalising on Fostex's supreme knowledge of acoustics and speaker engineering, and now offering a brighter, tighter sound, these studio monitors are designed inside out to provide the best monitoring experience, with minimal resonance, sparkling highs and rich, deep lows. And, with new 'high-gloss' front baffles, they look as stunning as they sound.

PM Series Group

PM-2 MkII

Created for larger rooms, the PM-2 has the power (240 watts of bi-amped power actually) and sophistication and, most importantly, the versatility to handle the most demanding recording applications. Equipped with a 200mm low frequency unit and remaining natural and transparent right across the audio spectrum, even at high sound pressure levels, the PM-2 is great for today's bass heavy music.

PM-1 MkII

Perfectly proportioned and offering the type of clear-transparent sound that singles out a great speaker, the PM-1 is capable of producing extremely high SPLs accurately across the full audio spectrum. With 120 watts of bi-amped power and a bass response that's full and dynamic, and a crisp high-end that sparkles with vitality, the PM-1 delivers the type of sonic quality that's usually the domain of monitors costing thousands.

PM0.5 MkII

The ideal choice for smaller studios requiring nearfield monitoring, the perfectly formed PM0.5 MkII offers 70watts of bi-amped power and produces great full range performance with exceptional neutrality even at high sound pressure levels.

The compact dimensions also enable accurate placement in confined or awkward spaces, with the dispersion from the two way ported enclosure design tailored such that it will deliver a superb sound almost regardless of room acoustics.

PM0.4

The ultra-compact PM0.4 now completes the lineup of the reputed PM-series ranging from 4" to 8" woofer size. PM0.4 is naturally recommended for desktop use but its superb audio performance in compact physical size expands its applications to professional console top studio monitoring, audio installation, as well as portable audio monitoring.

PM0.5-Sub MkII

Designed ideally for use with the PM0.5 MkII, the 110watt, 200mm driver PM0.5-Sub produces precise, low frequency reproduction and an excellent deep bass output. Easy to set-up (just a single gain control and phase reverse switch), the combination of a pair of PM0.5s and PM0.5-Sub provides superb sonic quality at an affordable price. Recommended for use with PM0.4.

NX-5A

NX Series

Want to take your recording experience to a whole new level? The NX-Series Powered Nearfield Monitors for Professional Recording Environments are like nothing you've heard before. But don't take our word for it. When choosing nearfield monitors for your studio you really ought to evaluate as many different speakers as you can

before a decision is made. After all, how else are you going to realise that your sound is best handled by a pair of Fostex NX-Series Monitors?

Listen to a pair of powered Fostex NX Series reference monitors and you'll discover a superb natural sound with little colouration, deep tight lows and crystal clear highs, precise stereo imaging and an almost complete lack of distortion – even at high sound pressure levels and including those subtle low frequencies.

Full of the latest in speaker technology and designed from the ground up for critical listening in both professional and project studios, broadcast and editing suites, or any other recording facility where a precise, transparent, professional sound is essential, the NX Series set new standards in sonic accuracy and packaging.

NX-6A

Excellent stereo imaging across the sound stage and an ideal response throughout the frequency range. Magnetically shielded drivers and a compact size allows easy placement close to all types of video, audio and computer devices, while the sonically pure and transparent sound, free from harshness and unwanted colouration, makes it ideal for all extended critical-listening sessions.

NX-5A

Created to offer a professional nearfield monitoring solution in tight spaces, the compact NX-5A excels in just about every department. The sound is full of clarity and audio accuracy, the stereo imaging is sharp and consistent and the level of sonic detail is incredible from a monitor so small.

The Truth

Now the choice can be made. Monitors which may make you sound good, or monitors which tell you how good you sound. Hooking up a pair of Fostex's NX-Series or PM-Series Montors for the first time is somewhat of a revelation. You may be surprised at what you hear. But at least it will be a true representation, free from any sonic colouration and distortion. Which is where Fostex come in.

PM-Series MkII

Nearfield Studio Monitors

PM-2MkII

- The LF drivers of PM-2 MkII: 8" (200mm), PM-1 MkII: 6.5"(160mm), PM0.5 MkII 5" (130mm), PM0.4 4"(100mm) have been developed to obtain extremely pure music reproduction by employing the latest technology in cone material.
- The cone uses a mixture of cut and milled fibres that are made from aromatic polyamide. It is then impregnated with resins to simultaneously achieve high rigidity and optimum damping.
- The cone also has an olefin film thermally adhered to its surface to control frequency response and to establish long term reliability.
- The center dust cap is made of non-wood cellulose material and is also impregnated with resin.
- The voice coil is made of super high purity copper wire to achieve extremely low distortion.
- The 25mm or 20mm soft dome tweeter employs Fostex's UFLC technology (Poly Urethane Film Laminated Cloth) to achieve light weight and high stability performance.
- The amplifiers are precisely calibrated to match the performance capability of the drivers.

NX-Series

Nearfield Studio Monitors

- 5" (130mm) or 6.5" (160mm) with HR (Hyper Radial) diaphragm for LF unit which utilises the latest diaphragm 'Radial Papermaking Technology' for natural and smooth sound reproduction.
- UDR (Up/Down Roll) Tangential driver edge eliminates the unwanted resonance.
- Wide-range 20mm hard dome tweeter with pure magnesium diaphragm to eliminate sharp-edge sound characteristics.
- Highly rigid cast aluminum frames for both LF and HF units which minimises unwanted vibrations and resonances.
- Magnetically shielded drivers allow for safe placement close to a video monitor.
- Time-aligned front baffle enclosure design with the HF driver recessed for a precise and pure sound.
- Bi-amplifier. Dedicated 60W (LF) + 40W (HF) bi-amplifier eliminates electric interference between the drivers
- Overall output level control & dedicated tweeter level control, LO EQ control.

Fostex®

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Genelec DSP Range Expanding

After nearly 30 years in the forefront of active monitor loudspeaker design and manufacturing, Genelec introduces the results of a decade of R&D work in applying digital signal processing to loudspeakers.

Since the founding of the company in 1978, Genelec Oy has recognised the importance of the acoustic integration of the monitoring loudspeaker into real-world working environments. The solution was to provide the loudspeaker with precise and practically oriented frequency response adjustments. This kit of adjustment tools has become an essential part of Genelec's pioneering active loudspeaker technology. Genelec has always measured, analysed, and calibrated its monitoring systems in its own testing chambers as well as customers' working environments. The database gathered over the years from this research forms a solid basis for identifying key problem areas and designing new and more sophisticated tools to overcome these challenges.

It is well known that any listening room imparts its own signature on the response of any monitoring loudspeaker system. A loudspeaker is only as good as its acoustic integration into the room. The acoustic performance advances made in developing the analogue Genelec 8000 MDE™ Series and 7000 LSE™ Series products have provided significant performance gains, both in the test chamber and in customer control rooms. The improvement is due to innovative – even radical – loudspeaker enclosure design, advanced electronics and new drivers. These solid acoustic foundations have been essential in taking the next step into the digital world with the 8200/7200 Series and GLM.SE™ monitoring systems.

Genelec 8250A shares the enclosure design of its analogue sister model, the 8050A.

Harnessing DSP power in an attempt to improve the fundamental performance of a compromised loudspeaker design to an acceptable level is hardly a worthwhile effort. A solid acoustic design complemented with enhancing DSP allows further strengthening of the product performance. DSP also greatly expands the loudspeaker alignment toolset to reach greater accuracy in acoustic calibration of monitoring systems. Consistency and ease of use are ensured by the fully automated room calibration AutoCal™, a built-in property of the versatile GLM™ and GLM.SE loudspeaker system management software packages.

Two DSP Families

Genelec's DSP Systems comprise two loudspeaker families: the 8200/7200 Series with two two-way DSP models and three DSP subwoofers, and the SE™ DSP loudspeaker system with a SE7261A DSP subwoofer and matching 8130A digital input loudspeakers. The 8200/7200 Series utilises the GLM software and each loudspeaker and subwoofer, having its own DSP circuitry, is connected to the control network. The 8200 Series monitors accept AES/EBU formatted digital audio signal or analogue line level signal. The 7200 Series subwoofers support up to eight channels of AES/EBU signal through their four XLR input and output connectors.

As its name suggests, the SE (Small Environment) System is aimed at smaller rooms and lower budgets than the 8200/7200 Series. The network is simplified by centralising all DSP processing into the network-controlled SE7261A subwoofer. The digital input 8130A loudspeakers have no independent DSP capability. Instead, the subwoofer, controlled by GLM.SE software, does all the necessary adjustments to the audio signals passing through it to each 8130A. The SE7261A subwoofer supports up to eight AES/EBU channels.

Genelec DSP monitoring systems are designed for wide ranging applications: post-production in film and video, broadcast environments large and small, and the varied and demanding world of music recording, mixing and mastering. Among the many criteria, the first and foremost in a Genelec DSP monitoring system, like any Genelec monitoring system, is that it must be robust and reliable. It must also be versatile, adaptable, consistent and easy to use. Through these criteria, the Genelec DSP and SE™ DSP loudspeaker systems take our customers further towards purity of sound reproduction, while saving valuable time and earning satisfied customers.

Software Features

GLM™ software and network provides connectivity for up to thirty loudspeakers and subwoofers, for example twenty-five 8200 Series loudspeakers and up to five 7200 Series subwoofers. GLM.SE provides connectivity for one SE7261A DSP subwoofer combined with up to eight 8130A digital input loudspeakers.

Both control softwares enable custom User Setups with all settings and functions stored in software setup files, or one setup stored directly into each loudspeaker (only the SE7261A subwoofer in SE system) for Stand Alone use.

A step-by-step Wizard guides the user through complete cabling connections and loudspeaker labelling. Rapid Cabling

setups are provided for most common system configurations, while Manual Cabling setups allow customised system configurations.

Groups for both channels and loudspeakers may be customised to suit different applications with Solo/Mute functions available for all loudspeakers and groups. Volume control can be via computer, 3rd party USB devices, customer mixing console or workstation. Video Display Compensation allows for compensating inherent video delays in digital video devices. AutoCal automated acoustic self-calibration algorithm is described in more detail in the following chapter.

AutoCal

AutoCal provides the industry's first integrated process for complete automated measurement, analysis, and adjustment of every monitoring loudspeaker in the control network to correctly align and integrate each monitoring loudspeaker into the mixing environment. AutoCal uses a factory-calibrated Genelec acoustic measurement microphone included in the GLM and GLM.SE software kits.

AutoCal automatically creates a compensation file for host soundcard, aligns level and compensates distance differences. The Acoustic Response Editor window provides accurate graphical display of the measured response, filter compensation and the resulting system response for each loudspeaker, with full manual control of acoustic settings. SinglePoint™ and MultiPoint™ microphone positions provide measurements for one, two or three-person mixing environments.

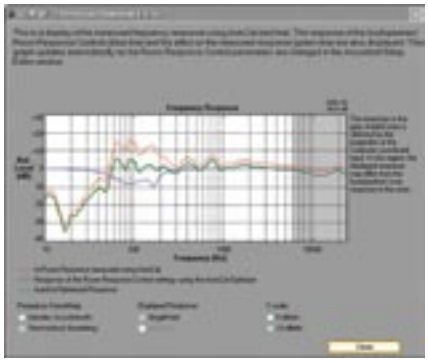
AutoCal Functions in the GLM System

The 8200 Series loudspeakers can utilise four parametric DSP notch filters and four parametric DSP shelving filters. Vertical Axis Trim allows vertical shift of the acoustic axis in situations where the loudspeaker cannot be physically optimised. The 7200 Series subwoofers utilise four parametric DSP notch filters and bass roll off controls. AutoCal adjusts correct crossover phase for all subwoofers in the network.

AutoCal Functions in the GLM.SE System

The network-controlled SE7261A subwoofer utilises four parametric DSP notch filters, bass roll off controls and phase adjustment. The output channels on the subwoofer for the 8130A digital input loudspeakers can utilise two parametric DSP notch filters. In addition the room response controls in the loudspeaker hardware can be used.

The SE7261A subwoofer is the centerpiece of Genelec's new SE DSP System.



The Interactive Response Editor window shows the frequency response curves before and after running the AutoCal calibration process.

GLM.SE main window showing loudspeaker groups and volume controls.

GENELEC®

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Stunning Sound, Revolutionary Technology

The JBL LSR6300 and LSR4300 Series go 'beyond accurate' all the way to 'stunning' by incorporating features that reduce the effect of problems in the room. We start with JBL transducer and network technologies that provide ultra-flat response and exceptional dynamic range. Then we incorporate features that help to overcome the contributions of the room. So even if you work in a small home studio, you'll have clear sound at the mix position. All LSR models are engineered for use in the most demanding production environments.

With JBL's LSR6300 Series And The New LSR4300 Series, Mixing Is A Pleasure

It takes more than an accurate speaker system to have accurate response at the mix position. Problems in the room dramatically colour what you hear at the mix position. Walls and corners can affect response. And standing waves at the mix position can lead you to misjudge bass content. As a result, a speaker that measures flat in an anechoic chamber may tell you a different story in the room.

The key to accuracy is tackling the effect of boundaries, standing waves, and reflections. In developing the LSR Series, JBL examined each problem in the environment and created the perfect solution. Even if you work in a small control room, an LSR system will provide smooth accurate response at the mixer's chair.

LSR4300 Series

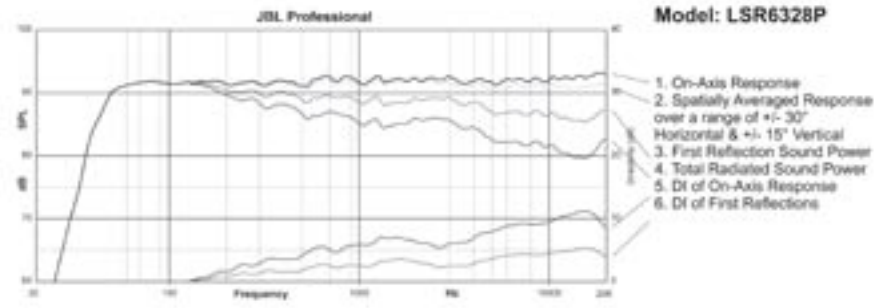
Stunning Sound

Starting with application-designed and built transducers engineered for extremely accurate response and superb power handling, the stunning sound of the LSR Series Studio Monitors make long mix sessions a pleasure. The LSR6300 line (LSR6328P, LSR6332, LSR6312SP) incorporates the single most significant advance in monitor history: JBL's patented Differential Drive Technology. Providing unparalleled performance, the woofer permanently dispels the notion that better linearity, higher power handling, and greater dynamic accuracy are somehow unobtainable. JBL's Differential Drive uses two drive coils with twice the thermal surface area of traditional speakers. As a result, LSR6300 systems provide higher peak output with less spectral shift that causes monitors to sound different when driven at different power levels. All LSR Series speakers withstand the JBL loudspeaker torture test driven at full rated power for over 100 hours.

Meeting higher standards than any other loudspeaker manufacturer, JBL's demanding test ensures that the LSR Studio Monitors give you accurate mixes year after year.

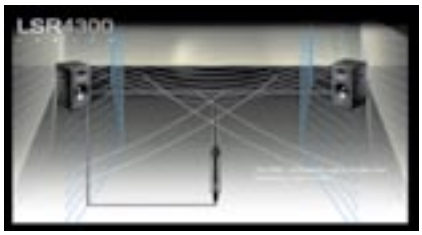
LSR - Linear Spatial Reference Design And Measurement Techniques

We all know that many loudspeakers have similar measurements but sound different. By going beyond simple on-axis frequency response measurements, JBL defines the ultimate performance specification for new systems – what it will sound like in your room. While other manufacturers use a single on-axis frequency response measurement taken at one point in space, JBL measures monitor systems over a sphere that encompasses all power radiated into the listening room – in every direction. This data reflects 1296 times the information of a single on-axis response curve. Seventy-two measurements of the direct sound field, the reflected sound field, and the reverberant field, the entire sound field heard by the listener, is correlated to


JBL Professional
Model: LSR6328P
1. On-Axis Response
2. Spatially Averaged Response over a range of +/- 30° Horizontal & +/- 15° Vertical
3. First Reflection Sound Power
4. Total Radiated Sound Power
5. DI of On-Axis Response
6. DI of First Reflections

optimise response at the listening position. In place of spectral smoothing used by some manufacturers, which conceals data, the JBL approach actually exposes flaws in systems, such as resonances, poor dispersion, and other causes of off-axis coloration.

The data shown is a set of spatially measured graphs that are the heart of JBL's philosophy.



Room Mode Correction™ analyzes low-frequency problems in the room and results in better mixes.

RMC™ – Room Mode Correction

Room modes or standing waves can mislead and give you a false impression of low frequency content in the mix. JBL is first to supply a complete solution for identifying and overcoming the negative effect of room modes. The LSR 6328P, 6312SP, and all LSR4300 models are equipped with RMC™, JBL's ingenious Room Mode Correction System.

The LSR6328P and LSR6312SP Subwoofer are equipped with a built-in 1/10th octave parametric equaliser which allows you to correct problems below 100Hz. The RMC Calibration Kit gives you everything you need to identify problematic room modes and tune your system. The LSR6325P-1 and LSR6332 enjoy the benefits of RMC when used in a system with the LSR6312SP Subwoofer. In the LSR4300 Series, system calibration is accomplished by simply plugging the LSR4300 calibration microphone into the speaker and pushing a button.

LSR6300 Series.

Hear why top industry professionals like GRAMMY® Award-winning engineer/composer Russ Landau rely on LSR technology at **www.jblpro.com/LSR.**

Built-in Boundary Compensation

With the advent of multi-channel production, space limitations may compromise the positioning of the speakers. JBL's powered LSR6300 models include boundary compensation switches and the LSR4300 RMC Systems include filters to offset the increase in bass response, that occurs when the speaker is placed near a wall, in a corner or on a work surface.

The JBL LSR6328P is the first studio monitor to be METAlliance certified.
For more information visit www.metalliance.com.

JBL PROFESSIONAL LSR4300 SERIES

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KRK Systems

Studio Monitors Achieve Clarity And Accuracy With Innovative Designs

By the 1980s, Keith Klawitter had achieved some success as a sound recordist on films such as *Final Mission* and *Brainstorm*, followed by work on *The Doors* in 1991. But when he approached the console, he often felt limited by the studio monitors available to him at the time. Rather than waste precious time grumbling about these speakers' lack of clarity and accuracy, he developed his own monitor that delivered exactly what he wanted. Not only did Klawitter's new design work for him, it seemed to work for many other producers and engineers, as well. As orders began to swell for his new, high-end design, KRK Systems was born. Now, with headquarters in Hollywood, Fla., and service centres in both the US and UK, KRK stands as one of the leading studio reference monitor manufacturers for home, project, and commercial recording facilities.

VXT8

Drivers	***Woofer:*** 8" Woven Kevlar
Tweeter	1" Silk Dome Ferrite
Input	XLR-1/4" TRS Combo
	10k Ohm Balanced
	Pin 1 + Sleeve = Ground
	Pin 2 + Tip = (+) High
	Pin 3 + Ring = (-) Low
Amp & Fusing	HF: 60 Watts
	LF: 120 Watts
	4.0A 100VAC 50Hz
	4.0A 110-120VAC 50/60Hz
	2.0A 220-240VAC 50/60Hz
Frequency Response	37Hz - 22kHz +/-1.5dB
Dimensions (H x W x D)	
	17 1/4" H x 12 1/2" W x 11 7/8" D 43.8cm H x 31.8cm W x 30.0cmD
Shipping Weight	41 lbs

Right out of the starting gate, KRK stood out from their competitors with their innovative designs. The company was one of the first to release active monitors, introducing integrated power supplies to the pro audio market. By precisely matching the power source with the transducer elements inside the enclosure, KRK monitors were optimised in a new way, and the technology became an important factor in delivering accurate sound reproduction not only for KRK, but for others to follow.

Users can distinguish KRK monitors from the masses by their signature yellow woofer made of double-woven Kevlar®, a material known for its ruggedness as well as its precise audio reproduction. Each model from the various KRK lines contains a custom-designed LF driver.

KRK also gave each of its products a distinctive enclosure, carefully designed to minimise the potential for standing waves as well as to create a sleek look. All cabinet edges and port openings are heavily radiused to reduce diffraction, which results in improved detail and stereo imaging. KRK monitors also use slotted ports (as opposed to the more common round port) to reduce air pressure inside the enclosure. Inside the box, KRK monitors feature a bi-amplifier design consisting of audiophile-grade components, and certain models contain limiter circuits designed to mitigate the negative effects of overdriving the amplifier or transducers.

KRK Exposé

KRK's "legacy" product line, the Exposé Series, debuted in 1997 with the E7 and E8, both active, two-way systems that offer the wide frequency range and SPL of a larger main system, but with the superior imaging and compact size of a first-class nearfield monitor. A few years later, KRK presented the E8T, an upgrade to the E8 that offers two symmetrical discrete power amplifiers, newly designed crossover circuitry, and an eight-sided design. "The excellent transient response of the E8T's Poly-Kevlar woofer helps a lot in handling the 'snappy' nature of transients in digital recordings, while the Titanium Oxide tweeter helps reduce ear fatigue after hours of listening," said Producer/Engineer Tal Herzberg, best known for his work with Christina Aguilera, the Black Eyed Peas, Pussycat Dolls, and Joss Stone, among others.

Herzberg uttered these words long before the recently released, top-of-the-line E8B, which ups the ante on the popular Exposé line. "The Exposé line is really well known as a high performance product, and we continue that flagship strategy with the E8B," says Mike Newman, Director of Product Management for KRK Systems. "We refined our cabinet design to create a contoured enclosure that not only looks great, but also provides a very wide sweet spot for increased off-axis response "We literally pulled out all of the stops because we wanted the best looking recording monitor on the market," says Newman. "The cabinets are hand-sanded and hand-buffed, and the heat sinks blend into design, which not only looks great but is also very functional. We are also very excited about our new proprietary high and low frequency drivers that provide amazing performance."

The E8B's curved front baffle and wide-radius edges reduce the diffraction effects for better imaging, while its non-parallel, internal walls help reduce chances of standing waves inside the cabinet. The thinnest point in the construction of the cabinet walls is one inch; the enclosure's curved exterior helps prevent resonant buildup in the walls themselves.

The E8B uses two discrete, 120-watt (RMS) Class A/AB power amplifiers. Its custom-designed HF tweeter is made of AlBeMet, a composite material comprised of beryllium and aluminum. The aluminum helps dampen the metallic characteristics of pure beryllium, which is very light but very stiff, allowing for high-frequency operation with less distortion. The resonances that occur with beryllium are far beyond the normal human hearing range, therefore eliminating any other second- or third-order harmonic distortion that is audible in the human range of hearing. KRK also increased

the voice coil diameter on the E8B tweeter, which leads to improved power handling capability. The lowered resonant frequency also improves the phase relationship.

With the Exposé line, KRK built an avid fan base of top-tier engineers, producers, and recording studios. Building on their wide customer base, KRK addressed the needs of the growing home and project studio market with the Rokit™ Powered Series, a line that features all of the quality and many of the design elements of the company's premium models (including that signature yellow woofer), but at a more affordable price.

The Rokit series consists of three studio monitors: the RP-5, RP-6, and RP-8, each boasting a five, six, and eight-inch glass aramid composite woofer, respectively. The Rokit line also features one-inch neodymium soft dome tweeters with Ferrofluid for increased thermal power handling and damping performance, which results in more natural-sounding highs and a tight low-end response. The RP-10S subwoofer complements the Rokit monitor series with its level control, phase switch, and variable low-pass filter, and also contains the full compliment of input options offered on the Rokit Powered Monitors.

E8B

Drivers	Tweeter: 1" AlBeMET Inverted Dome
Woofer	8" Dual Layer Kevlar w/Rohacell
Input Type	XLR (3-Pin) 10k Ohm Balanced Pin1 = Ground Pin2 = (+) High Pin3 = (-) Low
Amplification	HF: 120Watts Discrete Class A/AB LF: 40Watts Discrete Class A/AB
Fusing:	6.0A 100VAC 50Hz 6.0A 110-120VAC 50/60Hz 3.15A 220-240CVAC 50/60Hz
Max Power Consumption	500W
Frequency Response	40Hz - 30kHz +/-1dB
Maximum SPL @ 1m	112dB Music 115dB Peak
Video Shielding	Standard
Dimensions	19.3" H x 14.6" W x 14" D 491mm H x 370mm W x 355mm D
Shipping Weight	75.6lbs / 34.31 Kg
Mounting	OmniMount 120.0 WBX Hardware is installed into the inserts to mount the 120.0 WBX Base

Breaking New Ground With VXT

KRK's newest addition, the VXT Series, also contains three models – VXT4, VXT6, and VXT8. While the design characteristics build off the successes of the high-end Exposé Series, KRK keeps the price point in the median range. "It was important for us to have the VXT Series mirror the same look and performance of our flagship monitor, the Exposé E8B," Newman says. "The same expertise and care that went into the design of the Exposé went into the design of the VXT Series. The wider sweet spot, excellent imaging, and extended frequency response will make the VXT Series the preferred choice for recording professionals and musicians worldwide. Our Senior Design Engineer, Larry Altman, really raised the bar on this product line."

The nearfield monitors' curvaceous enclosure design, which features the same radiused front edge as the E8B, delivers fashion and function by offering low resonance, improved structural integrity and extended low-end. In addition to the custom Kevlar drivers, each VXT model features a one-inch soft dome tweeter, and a toroidal power transformer for low hum and minimum noise. The VXTs are constructed of ABS structural foam to allow more internal volume, which provides significant bass extension and keeps resonance to a minimum. And again, no internal parallel walls for improved imaging.

Ever the detail-oriented manufacturer, KRK designed the VXT Series with a host of extra perks, including tamper resistant switch covers, integrated Omni Mount support for wall or corner mounting, ground lift, defeatable limiter and auto mute controls, and high and low frequency adjust switches on the VXT6 and VXT8.

As KRK Systems continues to attract attention with the VXT Series and Exposé E8B, the company promises exciting times ahead. "We plan to continue to integrate our technology into the musician and project studio market," says Newman. "We'll continue to utilise what we've learned to develop high-performance products and continue to broaden our horizons. We want to own the control room!"

Ron Fair, Chairman, Geffen Records

"Over the past five years I have produced hits for Mary J. Blige, The Pussycat Dolls, The Black Eyed Peas, and Keyshia Cole, listening exclusively to KRKs.

KRKs are the benchmark for me. In production, in final mixes, in casual listening sessions: it all leads back to KRKs. I have brought them to mix rooms, mastering rooms and living rooms in order to establish that what I'm hearing.

KRKs are refined, pristine, and analytical, while at the same time kick serious ass, impress the hell out of artists, dazzle the promotion staff, and deliver an unforgettable sonic impression."

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Transparent Surround Monitoring

The world's only speaker and amplifier manufacturer delivering audio with full Blu-ray surround transparency. Lipinski aims to advance the art of recording to the next level of reference.

'Lipinski Powered Channel' - Lipinski PowerStand (Monitor L-707, L-360 Sand-filled Stand, L-300 Monoblock Amplifier)

POWERSTAND AMPLIFICATION

How can you place the amplifier very close to the speaker, without attaching it to the speakers' enclosure? Our solution is to use a mono block amplifier built into the speaker stand. Line level cable length is not as destructive to sound quality as the length of the speaker cable.

SURROUND

The Lipinski Surround Solution developed from over 35 years of research in surround. Founder, Andrew Lipinski, started honing his skills with Quadraphonics in the 1960s. Today, Mr. Lipinski's 6.0 (ceiling channel) SACD releases appear in Stereophile Magazine's prestigious list of "Records to Die For".

TRANSPARENCY

Andrew Lipinski's perfect hearing abilities were recognised by the United States National Bureau of Standards, where he was the only individual to achieve a perfect score on the listening evaluation of phonographic recordings. "A score of 10 correct of 10 selections would be expected one out of 1000 times" - National Bureau of Standards (NBSIR 88-3725) on Mr. Lipinski's score.

MATCHING COMPONENTS

Unlike most other audio manufacturers, we do not "tweak" the inaccuracy of one piece of equipment with an adjustment of another component (e.g. frequency response of speaker equalised with amplifier, etc). Each component must be state-of-the-art on its own. Only at the very end, do we evaluate the system as a whole.

IDENTICAL SPEAKERS

Neither "centre-channel" speaker design nor "surround speakers" (e.g., bipolar) allow for precise control of all aspects of the surrounding space if the speakers are not identical. Therefore, our design is based on adherence to one of our strongest beliefs: only absolutely identical speakers are appropriate for audiophile quality and professional surround monitoring.

PASSIVE ENCLOSURES

Our laboratory tests indicate that when an amplifier is built into a speaker, second and third harmonic distortions can rise up to 15 percent! This was also confirmed in our blind listening tests. The problem was recognised by some high end audio manufacturers using extra dampening material for enclosures of standalone amplifiers to avoid vibration caused by speaker proximity. Our solution is an industry-first "Powered Stand" based on our mono block amplifiers.

Monitor L-707 in new Black Satin
(photo by Wicked Digital)

TIME COHERENCY

Most ordinary surround systems do not compensate for an effect called time smear. Specifically, adding a subwoofer with its own preamp (even with controls for level, frequency cut off, phase etc) causes a delay of the signal. To compensate for this inevitable delay requires moving a subwoofer several feet in front of the satellite – practically unrealistic.

Lipinski solves the time-smear problem through high-pass and low-pass filter cards within Lipinski amplifiers, simultaneously for loudspeakers and subwoofers, thereby perfectly adjusting the system in the time domain.

SHORT SPEAKER CABLES

Our extensive experiments with top rated speaker cables clearly indicate that a quality, short length cable elicits better sonics than a superb quality, longer cable. Not only is the wiring inside each speaker kept short, but the Lipinski PowerStand forces the amplifier to rest in the body of the speaker stand, directly under the speaker.

DEDICATED SUBWOOFER AMPLIFICATION

Our external subwoofer amplifier delivers 150A of current and can work with loads as low as .5 Ohm. We use dual topology – two separate 300W power amplifiers working in parallel mode. This is to increase damping factor – the single most important parameter for a subwoofer amplifier. In contrast, bridge mode used by most manufacturers lowers the damping factor. In addition, we doubled the amount of output devices.

STEREO SUBWOOFERS

Single or multiple front subwoofers should supplement bass extension for the main speakers, thereby making them full range. Separate subwoofers also make setting up a room much more flexible. Subwoofers have slight but noticeable influence on imaging. Even sharp, low-pass filters allow for some bleeding above 100Hz which is directional. Therefore we recommend front firing woofers. For the same reason we recommend two wide-spread front subwoofers instead of one.

CLASS A

The monitoring system received highest Class A and Best Buy status in world audiophile and pro-audio magazines such as Pro Audio Review, Mix and Stereophile. Lipinski focuses on providing audiophile-grade equipment to pro-audio customers. We do this for our customers to achieve outstanding recordings.

Illuminated, Engraved, Glass Front Panel with multiple color combinations to suite environment

We use premium quality materials, hand-selected from custom suppliers to ensure the highest quality product.

FLAT FREQUENCY RESPONSE

Lipinski Sound personality cards perfectly match our loudspeakers with subwoofers for absolutely flat frequency response. To build our cards we do not use ICs, instead, we designed our patent-pending Lipinski Square technology.

Thereby, the Lipinski monitoring chain is the world's most linear and most accurate through integrating the subwoofers and power amplifiers into a perfectly time coherent and frequency calibrated system.

LIPINSKI SOUND

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From Indie Innovator To Market Leader

Building on a tradition of serving the independent music producer, M-Audio has become a market leader in providing creative technology solutions. The company combines years of expertise and a unique design philosophy to develop studio monitors with compelling performance.

Over the past 20 years, M-Audio has developed a reputation for pioneering innovative products that extend the boundaries of music creation. Although the company initially introduced home studio tools, the products' quality was so high – and the feature sets so rich – that big-budget studios also embraced M-Audio gear. Through two decades of democratising music creation, M-Audio has become a leader in providing first-rate creative solutions to artists, producers, and engineers worldwide.

Studio Monitor Focus

M-Audio has continually expanded its product line by applying proven expertise to new segments of the market. The company began by mastering digital audio signal path fundamentals in circuit design – quickly becoming the worldwide leader in interface technology. In an effort to foster comprehensive end-to-end music solutions, M-Audio then made a significant resource investment in reference monitor research. Today, M-Audio's studio monitors have become highly successful around the world – and are the best-selling professional monitors in the United States.

The new Studiophile BX Deluxe bi-amplified reference monitors.

M-Audio Studiophile BX Series – Number One By Design

M-Audio designed its first reference monitors to overcome the limitations of conventional near-field reference monitors within the digital audio environment. The Studiophile system delivered a wide range of frequency response via two extraordinary drivers and unique crossover technology – and quickly became a bestseller. Over the years, M-Audio has continued to refine the monitors' design and recently released the Studiophile BX5a Deluxe and BX8a Deluxe monitors.

The Studiophile BX Deluxe systems feature an enhanced tweeter waveguide providing exceptional high-frequency dispersion for off-axis listening. Additionally, the waveguide's precise design serves as an acoustic impedance converter, matching the tweeter's complex impedance for an extraordinarily accurate response.

The BX Deluxe monitors also feature integrated low-distortion amplification (separate amps for each driver) and curved Kevlar woofer cones. M-Audio chose Ferrofluid-cooled natural silk tweeters for exceptional power handling and natural damping. Along with new voicing, a revised crossover, and updated support electronics, BX Deluxe reference monitors provide outstanding sonic accuracy and performance.

Interpreting Speaker Measurements

Most loudspeaker designers are preoccupied with measuring the anechoic (reflection free) response of their speakers. It is important to measure on-axis frequency and phase measurements because this information says a lot about how a speaker will sound in ideal conditions. However, real-world recording studios are complex environments, so the anechoic data is of limited value.

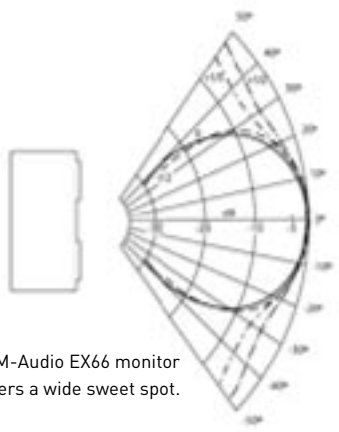
M-Audio makes sure to measure and characterise designs not just for 'laboratory fitness', but also for practical use. The goal is for every M-Audio speaker to achieve a broad and even dispersion, so the reverberant sound field matches the on-axis sound. In a well-calibrated listening environment, the user will get consistent response everywhere in the room.

M-Audio EX66 – A Cure For The Common Reference Monitor

The M-Audio EX66 reference monitor was designed to address common problems that have plagued studio engineers for years. When a traditional two-way loudspeaker monitor is placed on the meter bridge of a mixing console, the dispersion pattern can cause early reflections off the mixer's surface. In order to combat this widespread issue, M-Audio devised a particular geometric arrangement of three drivers (two identical woofers in parallel and a complementary tweeter – comprising a two-way system) to channel the vertical dispersion into a narrow pattern. This configuration significantly reduces early reflections, resulting in improved sound and a wider 'sweet spot'. When the EX66 monitors are placed on the meter bridge of a large-format console (like a Digidesign ICON, Neve, or SSL), engineers can enjoy a wide range of horizontal movement – and still get a proper stereo image even though they may not be equidistant from each speaker.

M-Audio EX66 professional high-resolution active MTM reference monitor.

The EX66 'linear-piston' woofer is another example of innovative problem solving. Instead of using the inexpensive construction materials employed by many speaker manufacturers, M-Audio analysed the resonance properties of a variety of different substances. This resulted in a customised cone with a tensile-strength-to-weight ratio that pushes breakup modes sufficiently high in the pass band.



The M-Audio EX66 monitor delivers a wide sweet spot.

With a custom surround and spider mechanism, EX66 utilises 6" low-frequency drivers that exhibit their first breakup mode at about 6.5kHz, at which point the signal is already down by over 30dB. The EX66 drivers therefore provide truly 'linear pistonic' action over the entire musical spectrum, revealing more of music's subtle details – and bringing all portions of each musical transient into correct alignment.

For loudspeaker cabinets, unwanted resonation can be a particularly insidious problem because it colours the timbre of music. The human ear/brain mechanism is capable of perceiving even extremely subtle resonances, and it's this phenomenon that allows critical listeners to distinguish easily between exceptional loudspeakers and mediocre ones. M-Audio decided to address the problem of cabinet resonances by using sophisticated digital signal processing (DSP) technology to tune the cabinet and crossover with exceptional precision. The EX66 eradicates all resonances from the cabinet by using IIR (infinite impulse-response) filters in its on-board 32-bit processor. The EX66 also uses DSP to achieve its precise and maximally flat 4th-order Linkwitz-Riley crossover.

Testing In Real-World Situations

Providing practical solutions for working musicians involves intense real world testing – but not just when the design is complete. M-Audio solicits input from top Los Angeles music producers and engineers throughout the development process. The company collects real-world feedback through evaluation sessions at Hollywood scoring stages and professional recording studios. By the time each new monitor model is released to the public, it has already been scrutinised by an elite group of professional mix engineers and producers.

Designing A Neutral Monitoring System

M-Audio monitors are engineered to sound as 'neutral' as possible – converting electrical signals into their exact acoustical equivalents, without colouration. This requires a painstaking process involving conceptual ideas and analysis of design principles, coupled with careful selection of materials and exhaustive testing. M-Audio engineers conceive each studio monitor holistically – so the design of the drive units, cabinets, electronic crossovers, and power amplifiers represent complete solutions, reproducing music with exceptional accuracy.

Continuing The Legacy

M-Audio monitors extend the company's legacy of democratisation by making high-performance monitors accessible to a diverse group of users. Moving forward, M-Audio remains committed to supporting its customers by engineering active loudspeaker studio monitors that outperform the competition.

M-AUDIO

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PMC – Ultimate Reference

PMC has placed monitors throughout the world's most superior facilities, demonstrating time and again their claim to be 'the world's reference monitor'.

Optimum Mastering – Bristol, Stereo MB2 XBD-A & TB2S+ 5.1 surround system

Introduction

PMC has become the industry standard for audio monitoring in the professional world. With superb stereo imaging and pinpoint accuracy from 5.1 surround sound systems, PMC monitors demonstrate an unparalleled listening experience. In the live broadcast arena PMC systems are in daily use for the BBC HDTV broadcasts, they are also responsible for the majority of premier 5.1 Audio for DVD Mastering. PMC is also highly regarded in field of post production and studio monitoring.

PMC monitoring systems are used in all genres of music and in all parts of the production chain, as well as in the home writing studio through to major studios and the final mastering of material for CD & DVD release.

PMC is regarded as the ultimate critical tool for engineers and artists.

Flagship

The large active BB5-A and MB2-A range from PMC justly deserves the label of 'no compromise'. Every element has been designed and manufactured purely for its performance and encompasses the smallest detail from individual cable choice through to hand selection of capacitors in the active crossover networks. This level of resolution cannot be achieved with standard technology and average tolerances. The large active range variants cover all requirements of the recording professional and are not restricted by the intended type of playback material. The combinations allow for perfect integration into any sized room, with increased LF headroom available with the 'XBD' models.

BB5 XBD-A

Professional Tools

The DB1S-A is the smallest activated monitor from PMC with an unbeatable response down to 50Hz. Superb power handling and resolution make it the ideal nearfield monitor for stereo and surround.

The larger activated TB2S-A has become a firm favorite amongst quality conscious broadcasters, post production and smaller sized studios in either surround or stereo nearfield roles.

The Activated IB1S-A is an extremely flexible 3-way monitor, which has found its home in the most varied of environments. It's hugely popular in Hollywood film scoring and postproduction. The IB1S-A features wide dispersion soft domed fabric mid and high frequency units, the PMC 10″ carbon fiber and Nomex™ flat piston driver. This flat patented driver increases dynamic handling and eliminates distortion that may occur due to cone break up.

DB1S-A & TB2S-A

The IB2S-A is based on the hugely successful IB1S-A with one major change to the driver compliment. The addition of the PMC 75 large soft dome mid range unit increases the definition and clarity to the level of the larger monitors in the range with no increase in cabinet size.

IB2S-A

The AML1 is as far from a 'me too' product as could be imagined. The AML1 design is one of 'no compromise' and the only way of achieving this goal is to manufacture the complete device 'in house'.

Surrounded by Sound

PMC offer all their monitors configurable to 5.1, from the smallest activated system through to the biggest BB5 active rig with a range of complementary subwoofers available. The DB1S-A and TB2S-A are compact, two-way activated monitor designs,

History

Founded in 1990 by Peter Thomas of the BBC and Adrian Loader of FWO Bauch, the combination of knowledge and a life-long passion for the music led to the production of PMC's first product – the BB5-A – an active main studio monitor. This design was snapped up by the BBC Maida Vale and Metropolis Mastering and remains the world's reference, used by Stevie Wonders Wonderland Studio, Hospital HDTV Broadcast London and for renowned classical labels such as Decca and Harmonia Mundi. Many of today's movie themes have been crafted using PMC, from such eminent composers as Hans Zimmer and James Newton Howard.

PMC reigns supreme throughout the leading mastering houses, broadcasters and much of the professional world. They believe a good loudspeaker should be able to relay the purest intentions of the artist without colouration.

Client List

Broadcast/Recording/ Mastering/Post

BBC TV
BBC Radio 1,2,6
BBC Maida Vale
Metropolis Studios & Mastering
Teldex, Berlin
Hospital HDTV Broadcast Studios
The University of Music, Düsseldorf
The Soundmasters
Fluid Mastering
Spirit Studios
Fleetwood Mobiles
Moving Picture Company
Piccadilly Radio, Manchester
Capitol Radio, London
Emil Berliner /Deutsche Grammophon
RTL
ORF
NFL (National Football League USA)
Sony
Dolby
Google
Digi Design
EMI
Siemens

Clients/Artists

Kraftwerk
Coldplay
Peter Gabriel
Stevie Wonder
Robbie Williams
Brian May
Francis Rossi
Peter Andre and Katie Price
Paul Merton
Tori Amos
Underworld
Crystal Method
Tony Bennet
John Rutter

Film

Dennis Sands
James Newton Howard
Danny Elfman
John Debney
Hans Zimmer, Remote Control Studios
Trevor Morris

employing unique technology in the form of PMC's ATL™ design and Flying Mole™ digital Bi-Phase Fusion amplification.
A TB25.1-SA or DB5.1-SA surround monitoring system with the Active TLE1S handling the .1 effects channel is a potent and precise tool for the audio professional. These compact systems are currently in service with quality conscious post production, mastering and broadcast fields worldwide.

TB2S-A 5.1 Surround System with TLE1S Subwoofer

PMC's ATL™ Technology (Advanced Transmission Line)

ATL™ has taken loudspeaker design to new levels, by using a cabinet construction and highly specified drive unit and crossover components. The PMC **ATL**™ design has enormous benefits compared to sealed and ported models available elsewhere.

The main driver is placed at one end of a long tunnel (the transmission line), which is heavily damped with PMC's proprietary absorbent acoustic material. This material is exactly specified to soak up the upper bass frequencies, which radiate from the rear of the main driver. The lowest frequencies emerge in phase from the large vent at the end of the line, effectively acting as a second driver. The air pressure behind the main driver is maintained controlling the driver in a vice like grip over a wide frequency range, which eradicates spurious cone movement that would lead to distortion. The upper bass and midrange is entirely transparent as it is not masked by harmonic distortion residing in the very low frequencies, which is a feature of less sophisticated designs.

ATL™ produces higher SPL's and lower bass extension than any other design of a similar size, even if identical drivers were used. The frequency response also remains consistent regardless of volume. Neither late night listening, nor prolonged monitoring sessions have to be conducted at high volumes to achieve maximum bass response – ideal for the home and professional alike.

Philosophy

PMC's design philosophy is quite a simple one, to design the ideal monitoring solution with the highest resolution possible without colouration and distortion. This supreme level of resolution is derived through unequalled R&D into (ATL™) Advanced Transmission Line Loudspeaker design and drive unit technology.

Also PMC's close association with principle engineers has allowed development of innovative solutions for the latest recording techniques and changing monitoring environments.

The design team have a clear vision of what must be achieved, therefore all of the PMC range is voiced identically, from the DB1S+ through to the BB5 XBD-A.

The balance is neutral and dynamic with wide dispersion, making image placement pin point over a huge listening window.

The PMC user is one which is pioneering in their field and will not settle for less than the best.

PMC

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More than a Black Box!

The philosophy of PSI Audio can be compared to Swiss watch designers. Our vision is to be globally recognised as pioneers in precision audio, combining innovation, creativity and technology.

Designed and manufactured at our Yverdon workshops in Switzerland, the latest generation of PSI Audio speakers is the culmination of 30 years of knowledge of materials and treatments, guided by a thorough understanding of acoustics.

The unique precision of PSI Audio monitors is a delicate mix between the passion, experience and know-how of electro-acoustic technology.

All of the product range takes advantage of our knowledge, and we strive to deliver the most coherent sound and design between all our models.

At the core of our speaker performance is an electronic design based on two exclusive concepts – CPR and AOI. This technology enables us to show people that PSI Audio is more than a black box.

CPR

The CPR system consists of multiple all-pass filters, each of which acts in a specific frequency range in order to obtain a wide area of Compensated Phase Response, generating a constant group delay.

Thanks to the CPR system, the position of the sound image is highly accurate. This technology allows the design of surround sound systems with different types of PSI Audio speakers that maintains an accurate phase response.

Practical Advantages of CPR, and Impact on Stereo Applications

The ear is very sensitive to group delays or phase irregularities of sounds. The human brain detects such irregularities easily and processes them into space related information such as positioning a sound source. All traditionally designed speaker systems suffer to a certain degree with such irregularities. These irregularities are the reason why some speakers produce a wider and deeper room perception that determines the reproduction of the sound image.
The speaker system represents the reference tool of every sound engineer.
An accurate transient response particularly helps the sound engineer during the fine tuning of the reverbs effects, or during the design of a specific sound and its position in the sound image.
As a sound recording passes through various processes (recording, mixing and mastering) in which various people, locations, and therefore speaker systems, will be involved, corrections may be applied due solely to phase irregularities that are not present on the actual recording. The PSI Audio speakers feature our unique CPR system that generates a Compensated Phase Response, removing such irregularities, generating a stereo image and projected room of extreme accuracy. PSI Audio speakers provide a more accurate and precise reference tool to the sound engineer.

CPR Impact on Surround Sound Applications

Traditional speaker designs have different phase responses, and therefore the phase inaccuracy phenomenon is worse in surround sound applications where room information and positioning have an even higher priority and a more critical part of the sound engineering process. This is one of the reasons why speaker manufacturers strongly recommend using speakers of

Full PSI Audio monitors range. A225-M, A25-M, A21-M, A17-M, A14-M

PSI Audio A21-M

PSI Audio A21-M

PSI Audio launched a new Master series this year. Let's focus on our best seller, selected by broadcasters and knowledgeable recording studios all over the world: the A21-M.

The A21-M is the Swiss army knife of the product range. It is a high power near/mid-field precision monitor that covers a broad frequency spectrum, allowing the user to be in full control of their audio production. Its unique and highly optimised assets make it perfect for near, mid-field and surround sound applications where ultimate precision is required.
The powerful bi-amplified output features the unique AOI output stages, while the active crossover, with integrated CPR, delivers unprecedented impulse behaviour with excellent stereo imaging.

Company

PSI Audio is the brand name of Relec, a Swiss company specialising in high performance professional studio monitors. Since it was formed in 1977, Relec has developed a huge variety of speakers for Hi-Fi, PA, and Professional Studio applications, a large number of which are OEM products produced for respected international companies who label and market the speakers under their own brand names.

Many of these products have gone on to win the industry's most desirable awards, as well as being extremely enthusiastically received by the professional press.
Today, PSI Audio has evolved into a worldwide brand, producing the ultimate in professional studio monitors. The users have the opportunity to acquire a whole new generation of innovative, cutting edge speakers and experience for themselves PSI Audio's philosophy of excellence through technology.

the same type when creating a surround sound system. The CPR system by PSI Audio features an extremely accurate and superior surround sound image and a much improved working environment. One of the big advantages of the CPR system is also that for the first time a user can mix different types of PSA Audio speakers in a surround sound system, whilst maintaining perfectly accurate phase response. Not only will the PSI Audio surround system sound much more accurate, and therefore provide a superior working tool, but it can also introduce significant cost and space savings when investing in a new monitoring system.

AOI

The AOI system detects movement of the membrane and the moving coil, and processes them using counter reaction filtering. The damping rate is continuously adjusted in different frequency bands to match the position of membrane and coil. The AOI system allows the reproduction of sound without transducer colouring over the whole frequency range.

Practical Advantages

The PSI Audio speakers featuring the AOI system have superior impulse behaviour to traditional amplifier designs. Whilst the transducer travels to its intended position, the AOI circuitry seamlessly adapts the amplifiers output impedance to ensure ideal acceleration of the membrane to reproduce the desired impulse. Once the transducer reaches the end of the impulse, the AOI circuitry provides a break in order to act against an overshooting of the transducer. The AOI circuitry is almost capable of reproducing a square wave and therefore increases accuracy by marrying the transducer and the amplifier into a perfect couple. From our experience, a nice side effect of the AOI system is that the membranes of a PSI speaker do not produce parasitic sounds when other speaker systems in the room are in use. When air pressure changes due to other sound sources, the AOI will detect this and tighten the damping of its transducers in order not to produce parasitic sounds (sounds not present at the input). In today's times where much more importance is given to the low end reproduction of sounds, especially when using sub woofer technology in surround sound systems, the importance of a monitoring system that has an accurate, and not a flattering, reproduction becomes essential. As a result of the AOI, the PSI Audio speaker range has a highly accurate impulse behaviour, with a minimum of transducer coloration.

PSI AUDIO

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e info@psiaudio.com
w www.psiaudio.com

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Tannoy – a famous name with a proud heritage

Few companies' products have such a profound impact on our lives that their names enter the dictionary as generic descriptions for their inventions. In the audio field, Tannoy stands alone as a name synonymous with sound.

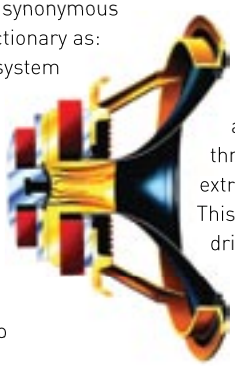
Few companies' products have such a profound impact on our lives that their names enter the dictionary as generic descriptions for their inventions.
There are notable exceptions such as Biro, for its ballpoint pen, and Hoover for its vacuum cleaner. But in the audio field, Tannoy stands alone as a name synonymous with sound, appearing in the dictionary as:
Tannoy (n) 'a communications system with loudspeakers' ...and the phrase 'Over the Tannoy' is universally used to describe a PA announcement.
The company's success in developing public address systems and then continuing its reputation for pioneering audio solutions within the studio environment is legendary.

Despite being steeped in history, the company has never dwelt on its past. Proud of its heritage and the credibility built up with its long association with the professional recording industry, Tannoy has always been an innovator where quality sound reproduction is concerned.

Unique Technologies

Tannoy Dual Concentric™ Drive Unit

Tannoy's core technology, the Dual Concentric™, is unlike ordinary drive units in that it is effectively two drivers properly merged into one. The high-frequency unit is positioned on the back of the low frequency driver so that they are on the same axis. As a result, sound energy is propagated from the same point and delivered through the centre of the low frequency cone providing a true point source. This integrated approach provides a constant time delay over the frequency spectrum offering better transient performance and sound quality with better harmonic alignment than a displaced source monitor design. The crucial benefit at the mix position is the delivery of a more natural and cleaner sound with greatly enhanced intelligibility.



The 'Dual' design provides a very wide sweet spot with an exceptionally even response throughout the listening area and extraordinary transient response. This phase accurate Tannoy-designed drive unit has, for all these reasons, been the choice of professional studio engineers for decades.

WideBand™ Technology

Tannoy has been at the forefront of developing loudspeakers with WideBand™ performance. Extending the high frequency roll-off out to 51kHz corrects the time or phase response at the upper end of audibility, resulting in enhanced accuracy and 'air', improved clarity within the essential mid band area, and even enhancing definition of low frequencies. Tannoy WideBand™ Technology is an essential component of the Precision and Ellipse monitor designs delivering increased tonal accuracy of the individual instruments in the recording process – a mix-critical factor allowing the best EQ and placement decisions to be made.

iDP™ (Interactive Digital Programming) Technology

Accurate room optimisation has taken a quantum leap forward thanks to the development of Tannoy iDP™ technology and its incorporation into Precision iDP and Ellipse iDP models. Utilising iDP™ software, precise matching to the listening environment is possible as each monitor can be individually optimised, taking into account its exact position within the room relative to the room boundary, and its own performance relative to the acoustic properties of the room. iDP™ technology also allows the user to control parameters in 'real time' – such as bass management, global level, recall of different preset settings, solo/mute functions etc.

Tannoy is the longest established loudspeaker company in the world, having been in 'the business' for more than 80 years. It was Tannoy's invention of the Dual Concentric™ speaker in 1948 that brought the company into contact with the top end of professional audio. Arthur Haddy, chief recording engineer at Decca, heard the Monitor Silver version in 1951 and ordered it for the famous Decca FFRR studios in London. EMI subsequently ordered Tannoy Dual Concentric™ loudspeakers for Abbey Road recording studios.

Tannoy User Stories

Randy Kling

The home page of Randy Kling's website (www.discmastering.net) sums up a familiar story of studio professionals worldwide who discovered Tannoy early in their career and have never found a reason to move away. From Elvis Presley to Alice Cooper and through to the present day Randy's engineering talents span over 50 years in the business during which time he has racked up an astonishing 300 gold and platinum records. A constant in his studio equipment list throughout his career - Tannoy monitors. As he says on his website, "Through the passage of time, from tape to vinyl to digital, I've always used the same brand of monitors."

Tony Maserati

When mixing ace Tony Maserati shows up for work, whether in Manhattan mixing Mary J or Beyonce, out in Los Angeles with Ron Fair and the Black Eyed Peas, or in Miami with J Lo, he's comforted by a few certainties. The software on his hard drive, the analogue outboard in his flight case, and his trusted Tannoy monitors, provide a level of consistency from studio to studio that Maserati trusts to help him nail each mix. Ever mindful of advances in speaker design, Maserati recently discovered Tannoy's Ellipse 10 iDPs; a speaker system that's compatible with everything he loves about his Tannoy DMT-12s, which he has worked with for years, yet more portable and effective for detail work.

Carmen Rizzo

Producer and mixer, Carmen Rizzo, is a busy man. In addition to a growing and increasingly eclectic mix of studio projects, he's co-written and played on a wide variety of influential artists' albums and has a burgeoning solo career himself. Recently remixing a Dave Stewart song, featuring Sarah McLaughlin, Annie Lennox, and Imogen Heap, that was written for Greenpeace, he used his new system comprising Tannoy Precision 6 iDP monitors and TS112 iDP sub. "On the first listen I was literally so impressed I couldn't believe it," he said. He further explained that the appeal was multi-faceted; the ability and ease of control when it comes to adjusting speaker parameters, the simple setup – one Ethernet cable between the sub and monitors, the degree of control, and above all, the fact that they represent a lot of speaker in a compact package, and are consistently accurate at any volume.

Consistent Product Development

Landmark speaker models and developments punctuate Tannoy's history – classic loudspeaker models such as the Monitor Red (1958), Monitor Gold (1967), and the Super Red (1980). More recently the long running and highly successful Reveal series has brought Tannoy to a wider audience offering a high performance and competitively priced range of studio monitors.

Significant advances in digital speaker measuring techniques such as Klippell™ symmetry and non-linear distortion analysis, laser scanning interferometry, and acoustic CAD simulation, has allowed further refinement of the Dual Concentric™ drive unit. This, combined with our highly exacting manufacturing processes, ensures that the Precision and Ellipse monitor ranges deliver wide bandwidth, significantly low levels of distortion, very smooth response, extremely accurate phase control and high sensitivity levels.

TANNOY

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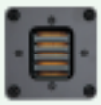
Monitors Manufacturers Directory

ADAM AUDIO



Based in Berlin, Germany, Adam Audio produces a wide range of pro audio monitors using their ART (Accelerated Ribbon Technology) tweeter.

From tiny two-way nearfields through mastering monitors and a range of subwoofers, Adam Audio has the range to configure systems for all environments.

www.adam-audio.de

ALESIS

Founded back in 1980 bringing affordable 16-bit processors to the world and taken over by Jack O'Donnell in 2001, Alesis is now headquartered in Cumberland, Rhode Island. It manufactures nearfield active and passive TWO-way monitors for project studios.

www.alesis.com

AMBIANCE ACOUSTICS

Based in San Diego California since 1994, Ambiance Acoustic produces a range of uniquely designed multi-speaker cube monitors for stereo and multi-channel applications.

www.calcube.com

ATC

Billy Woodman formed British loudspeaker company ATC in 1974 with the brief to create the best monitor speakers through technological advance. ATC has a number of monitors for both studio and sound reinforcement use.

www.atc.gb.net

AUDIX

Formed in Redwood City California in 1984, Audix moved to their current location in Oregon in 1991 where they manufacture their small active PH3 and PH5 monitors.

www.audixusa.com.

B&W

John Bowers and Peter Wilkins developed a business producing some of the most visually distinctive monitors ever seen. This continues to this day with products like the FPM flat panel monitor and the Nautilus.

www.bowers-wilkins.co.uk

BAG END LOUDSPEAKERS

Located in Lake Barrington Illinois, Bag End Loudspeakers manufactures a number of speakers for a wide variety of environments. Cinema, small and large-scale sound reinforcement, studio and instrument cabinet speaker systems are all catered for here.

www.bagend.com

BEHRINGER

With one of the biggest ranges of audio equipment around, it's not surprising Behringer's portfolio includes a wide range of monitors, including the Truth range, with both ribbon and conventional tweeter designs.

www.behringer.com

BLUE SKY

Blue Sky International is a collaboration between Group One Ltd and Audio Design Labs Inc formed in 2001. Blue Sky has a number of monitoring systems for both stereo and multi-channel work, including its THX-certified System One series.

www.abluesky.com

DIGIDESIGN

Digidesign has more than 20 years of experience in the world of digital audio workstations, and after Avid Technology acquired it in 1995, has expanded and diversified. Digidesign now has the RM1 and RM2 active monitors in its portfolio.

www.digidesign.com

DYNAUDIO ACOUSTICS

Dynaudio celebrates its 30th anniversary this year. Dynaudio has come a long way from the P-series in 1977 made from OEM drivers and Dynaudio crossovers. The range now includes such stars as the BM range, and the networkable and DSP enabled Air series.

www.dynaudio.com

EARTHWORKS

David Blackmer's (founder of dbx) New Hampshire based Earthworks has a reputation for high-end pro audio equipment and this is evident in its Sigma range of compact monitors.

www.earthworksaudio.com

EDIROL

Edirol is Rolands' audio arm that deals with computer based products. Edirol has developed a line of USB and Firewire interfaces and also has a range of active micro speakers for close computer monitoring, and a USB micro monitor system.

www.edirol.com

EMES

German company Emes manufacture a wide variety of active two-way monitors and subwoofers for stereo and surround applications in broadcast, post and project studio environments.

www.emes.de

ESI

ESI is based in Korea and designs and manufactures an array of computer based audio products that include two-way active monitors and active subwoofer to allow for a number of monitor configurations.

www.esi-pro.com

EVENT ELECTRONICS

Event has been producing award winning precision monitors since 1994 and currently has a number of active two-way monitors. It has just introduced its S100 active subwoofer to allow for both stereo and surround configurations.

www.event1.com

EXCEL AUDIO SYSTEMS

Excel manufactures the excellent 101A, 202A, and 301A active monitors, plus the 802FEU (Frequency Extension Unit) sub. All of the units main units are two-way active, ported models with minimum phase active crossovers, and magnetic shielding.

www.excelaudio.co.uk

EXIGY

Formed in October 2003, and now partnered with Audient and LA Audio, Exigy specialises in monitoring solutions and installations in post, music, and home cinema, with custom work on projects where necessary. Satisfied clients include Grand Central Studios, Realworld Post, and more.

www.exigy.co.uk

FAR

ATD2 specialises in electro acoustic technologies and the design of digital active monitors under the brand name FAR. There is an extensive collection of both digital and analogue active two-way monitors and both analogue and digital subwoofers.

www.atd2.com

FOCAL

French speaker manufacturer Focal has some of the most distinctive looking monitors on the market today. Its range includes a number of two and three-way active designs both analogue and digital, with matching active subwoofers for multiple configuration options.

www.focalprofessional.com

FOSTEX

Fostex has been involved in the development of pro audio products since 1973 bringing a number of firsts to the industry. The Fostex monitor range accommodates those working in field recording, studio, broadcast, and project environments, with a range of micro and two-way active designs with active subwoofer option.

www.fostex.com

monitors 2008

GENELEC

Genelec was founded in Finland in 1978, and monitor design and manufacture has been the core of its business ever since. Genelec is responsible for a number of key technology developments in monitoring that are in use today.

The Genelec active monitor range includes examples of almost every configuration, and Genelec also undertakes custom installations.

www.genelec.com

GRIFFIN AUDIO

Based in New York, Griffin Audio is focused on uncompromising monitor design.

The Griffin range includes active two and three-way monitors, active subwoofers, in wall mounted and specialised active mastering speakers.

www.griffinaudiousa.com

HARBETH

Based in the village of Lindfield, West Sussex, Harbeth manufactures both domestic and professional monitors. The professional range of active monitors have found homes in many places, but it is the BBC who have mainly taken to Harbeth, as its designs are a direct drop-in replacement for the LS3 and LS5 monitor speakers.

www.harbeth.com

HOT HOUSE

Hot House Professional Audio is a small high-tech R&D driven company geared towards the development of standard-setting studio monitoring products.

Hot House has introduced well over a dozen new amplifiers, studio monitors, and active subwoofers over the last few years. The range includes passive two-way and a variety of active mid and farfield monitors.

www.hothousepro.com

JBL

James Bullough Lansing established his company in Los Angeles back in 1927 and was involved in the development of motion picture sound systems from the very beginning. From this, JBL has grown to supply monitor speaker systems for every area of the pro audio industry, including the LSR range with RMC (Room Correction) integration.

www.jblpro.com

KLEIN + HUMMEL

Established in Germany in 1945, Klein + Hummel studio monitors have been setting global standards in professional sound reproduction for decades. Conceived as acoustically uncompromising tools for the evaluation and fine-tuning of sound material, their range runs from small active two-way through analogue and digital three-way active monitors and active subwoofers.

www.klein-hummel.com

KRK

Film sound engineer Keith Klawitter, and his need for a monitor of uncompromising accuracy and clarity, founded KRK in 1986. KRK now manufactures a range of active two-way monitors with active subwoofer options, and its four-way ultimate mains system.

www.krksys.com

LEGACY AUDIO

From humble beginnings in a garage in the mid-west USA, Bill Dudleston and Jacob Albright have sought to bring monitors of stunning craftsmanship for multiple applications to the world of pro audio, and have successfully done this for over two decades. Legacy has passive designs for all components of a surround system, and main speakers from the two-way Studio to the five-way Helix.

www.legacy-audio.com

LIPINSKI SOUND

Educated in Europe, and now based in the US, Andrew Lipinski founded Lipinski Sound in October 2003. As the only audiophile oriented manufacturer professionally active in both recording arts and engineering sciences, Lipinski Sound aims to advance the art of music recording and playback to the next level of reference. The range of passive units can be configured for stereo and surround applications.

www.lipinskisound.com

MACKIE

Amongst Mackie's range of extensive and, in some cases, ground breaking pro audio equipment was the HR monitor. This set a standard for affordable active studio monitoring which continues today with Mackie's range of active monitors designed for studio and post applications in stereo and surround.

www.mackie.com

M-AUDIO

M-Audio is now part of Avid Technology Inc. and is focused principally on computer based studio systems. M-Audio has a range of speakers from micro desktop monitors to high spec active studio monitors for stereo and surround applications.

www.m-audio.com

MEYER SOUND

In 1979, John and Helen Meyer established Meyer Sound to create products for sound reinforcement and recording, designed to meet the real challenges faced by audio practitioners. Today, the company's history shows a track record of more than 27 years of innovation, quality, performance and support. Meyer Sound has speakers for every kind of sound reinforcement and industrial application, as well as near and farfield monitoring solutions for studio use.

www.meyersound.com

MISSION

Founded in 1977, and producing the world's first polypropylene drive unit in the Mission 770 in 1978, Mission has pushed, and continues to push, forward and develop its extensive range of monitors for stereo and surround applications.

www.mission.co.uk

MUNRO ACOUSTICS

Munro has been designing and building sound facilities for over 25 years. It has maintained profile by adapting to the changing needs of these facilities. Munro designs and manufactures custom monitor installations for music, post, cinema, and mastering facilities.

www.munro.co.uk

NADY SYSTEMS

Established in 1976 by John Nady, an electronics engineer/musician who developed wireless technology, Nady has since diversified into other areas of the industry and now manufactures a range of monitors from small two-way nearfields to large sound reinforcement systems.

www.nady.com

NHTPRO

Founded in 1987, California based NHTPro has produced a number of award winning monitors for many applications. The range is made up of a number of small active systems for small desktop through to full surround setups.

www.nhthifi.com

PMC

UK-Based PMC was founded in 1990 by Peter Thomas and Adrian Loader. PMC produces precision and speaker systems featuring its unique Advanced Transmission Line design across the range. PMC manufactures both active and passive monitors for use in music studios through to full film surround mixing environments.
www.pmc-speakers.com

PSI AUDIO

In 1975 while still studying at the EPFL in Lausanne, Alain Roux produced the first of his monitors under the PSI brand name. PSI Audio now produces active monitors in both stereo and surround configurations.
www.psi-audio.com

QUESTED

Roger Quested has been designing monitor cabinets since the early seventies and continues to do so with a team at Quested with some 60 years of combined experience. Quested now produces a number of small nearfield passive and active monitors for use in all types of studio environment.
www.quested.com

SAMSON AUDIO

Samson has been designing pro audio equipment for the last 26 years, initially wireless microphone technology, but now equipment across the pro audio world. Samson has a range of passive and active monitors from small computer audio monitors to full live PA systems.
www.samsontech.com

SLS LOUDSPEAKERS

Since the early 1970's, US based SLS Loudspeakers has been designing and manufacturing loudspeaker systems for both studio and sound reinforcement applications. Specializing in its Ribbon Driver Technology, SLS now has a vast array of monitors for critical studio, live, cinematic and commercial use.
www.slsloudspeakers.com

SOUND PROJECTS

Founded originally as Master Blaster in 1983 specializing in modular sound reinforcement systems, this Dutch company has slowly been re-branding its products as Sound Projects as the company now deals with small studio monitoring as well as continuing with its sound reinforcement loudspeakers.
www.soundprojects.com

SURROUNDTEC

German company SurroundTec designs and manufactures a range of monitors that can be either active or passive, and combined to create any stereo or surround configuration required.
www.surroundtec.de

TANNOY

Tannoy has been designing, developing and manufacturing some of the most familiar monitors in use in studios worldwide. Known for its development with Waveguide and Dual Concentric Driver technology, Tannoy now manufactures monitors for studio, live and commercial installations.
www.tannoy-speakers.com

TAPCO

Tapco produces a range of small active two-way nearfield monitors, and both passive and active small PA speakers for multiple configurations.
www.tapcoworld.com

TASCAM

Tascam makes a vast range of gear for the audio professional, including a series of studio monitors. The VL-A Series are two-way, 'value-priced' models with a complementary sub, and the top of the range VL-X series, and the VL-S series (incorporating NXT driver technology) complete the range.
www.tascam.com

TRUTH AUDIO

US based Truth Audio currently produces a dual woofer two-way nearfield monitor that can be specified in either a passive or active configuration. There are plans to produce a larger mid-field monitor.
www.truthaudio.com

WESTLAKE AUDIO

Westlake Audio strives to design and build loudspeakers that are as accurate to the source recording as currently possible given the existing level of technology, and to research methods of improving this technology for future generations of loudspeakers. Westlake Audio produces a range of monitors from small nearfield to large farfield, and wall mount speakers.
www.westlakeaudio.com

WHARFEDALE PRO

Since 1932, Wharfedale has been at the forefront of loudspeaker technology – these seventy-five years of experience in the design and manufacture of audio systems has led to the creation of Wharfedale Pro and the range of active and passive monitors for a wide range of stereo and multi-channel applications.
www.wharfedalepro.com

YAMAHA

Yamaha are of course responsible for the most popular nearfield monitor in pro studios, the NS10. Yamaha has continued to develop its monitor range and now has a wide range of active and passive speakers for all types of studio environment.
www.yamaha.com

YORKVILLE SOUND INC.

Since 1963 Yorksville Sound has been a leader in the design and innovation of monitor loudspeaker products for studio, club and concert hall applications. The range consists of small active nearfields through to full concert hall systems.
www.yorksville.com

One Great Thing Leads to Another ...

BM 6A mkII *BM 12A*

... and Another

Dynasty expanded
The Dynaudio Acoustics BM 5A set a new benchmark for what an active nearfield studio monitor could be. The new BM 6A mk II and BM 12A take advantage of that same design philosophy while offering more power, more headroom and wider frequency response.

As one of the few manufacturers that build our own drivers, we believe in a no compromise approach to designing studio monitors, whatever the application. The new BM 6A mk II and BM 12A are no exception to that rule.

Dynaudio Acoustics - Superior tools for critical monitoring

BM 5A *BM 6A mkII* *BM 12A* *BM 9S* *BM 14S*

For details contact your dealer today or visit www.dynaudioacoustics.com

dynaudio acoustics
IF IT'S THERE - YOU'LL KNOW IT

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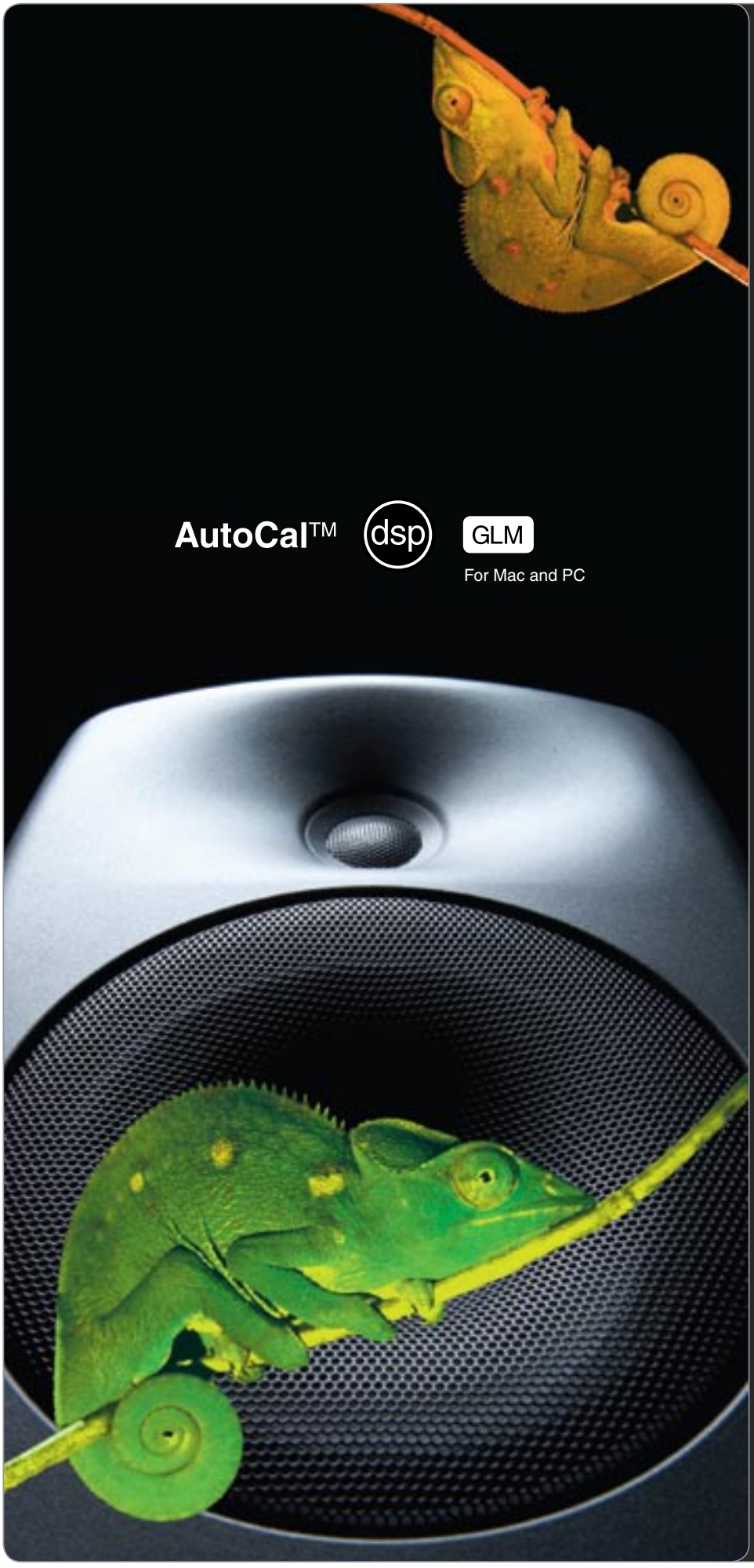

Designed to Adapt

Nature has come up with clever ways to let some animals adapt quickly to their environments.

TEC 2007 WINNER

At Genelec our new 8200 / 7200 DSP Series also have the ability to adapt to their environment, by design.

AutoCal™, Genelec's optimisation software takes into account level, distance and 8-band equalization to adapt each monitor loudspeaker to its immediate environment. What's more it does it as a system with network control of up to 30 adaptable loudspeakers, including subwoofers.

In 1978 Genelec brought active monitoring to the professional audio world. An essential part of our active design is the room response controls. They are included in every Genelec analogue model to help integrate them to the listening environment. To further this, Genelec Product Specialists travel the world providing system calibration services to ensure optimum monitoring performance for our large system customers.

The Genelec DSP Series now brings this commitment, along with our acoustical knowledge and experience, directly to every customer.

AutoCal™ - cleverly designed to give you the room to adapt.

GENELEC®

www.genelec.com